

Paul Bedore Robertson-Bryan, Inc. 9888 Kent Street Elk Grove, CA 95624 May 12, 2015

Paul:

I have enclosed our report "Evaluation of the Chronic Toxicity of Lehigh Permanente Cement Plant Site Water Samples" for the samples collected April 13, 15, and 17, 2015. A summary of the results of this testing follows (note: TUc = 100/EC25 or 100/IC25):

Chronic Effects of Lehigh Pond 4A Site Water on Ceriodaphnia dubia

The survival EC25 was >100% site water, resulting in <1.0 TUc. The reproduction IC25 was 64.2% site water, resulting in 1.6 TUc.

| Ceriodaphnia dubia Test Endpoint = | Survival | Reproduction |
|--------------------------------------|------------------|------------------|
| Survival EC25 or Reproduction IC25 = | >100% site water | 64.2% site water |
| TUc = | <1.0 | 1.6 |

Chronic Effects of Lehigh Pond 13 Site Water on Ceriodaphnia dubia

The survival EC25 was >100% site water, resulting in <1.0 TUc. The reproduction IC25 was 29.5% site water, resulting in 3.4 TUc.

| Ceriodaphnia dubia Test Endpoint = | Survival | Reproduction |
|--------------------------------------|------------------|------------------|
| Survival EC25 or Reproduction IC25 = | >100% site water | 29.5% site water |
| TUc = | <1.0 | 3.4 |

Chronic Effects of Lehigh Pond 14 Site Water on Ceriodaphnia dubia

The survival EC25 was >100% site water, resulting in <1.0 TUc. The reproduction IC25 was 66.7% site water, resulting in 1.5 TUc.

| Ceriodaphnia dubia Test Endpoint = | Survival | Reproduction |
|--------------------------------------|------------------|------------------|
| Survival EC25 or Reproduction IC25 = | >100% site water | 66.7% site water |
| TUc = | <1.0 | 1.5 |

Samples from the Lehigh Permanente Cement Pilot Plant designated ITS Influent and ITS Effluent were also collected on April 13, 15, and 17, 2015. A summary of the results of this testing follows (note: TUc = 100/EC25 or 100/IC25):

Chronic Effects of Lehigh ITS Influent on Ceriodaphnia dubia

The survival EC25 was >100% influent, resulting in <1.0 TUc. The reproduction IC25 was 34.3% influent, resulting in 2.9 TUc.

| Ceriodaphnia dubia | Survival | Reproduction |
|--------------------------------------|----------------|----------------|
| Survival EC25 or Reproduction IC25 = | >100% influent | 34.3% influent |
| TUc = | <1.0 | 2.9 |

Chronic Effects of Lehigh ITS Effluent on Ceriodaphnia dubia

The survival EC25 was >100% effluent, resulting in <1.0 TUc. The reproduction IC25 was 95.3% effluent, resulting in 1.1 TUc.

| Ceriodaphnia dubia | Survival | Reproduction |
|--------------------------------------|----------------|----------------|
| Survival EC25 or Reproduction IC25 = | >100% effluent | 95.3% effluent |
| TUc = | <1.0 | 1.1 |

Please note that the NPDES Compliance Summary is attached to this cover letter. If you have any questions regarding the performance and interpretation of these tests, feel free to contact my colleague Alison Briden or myself at (707) 207-7760.

Regards,

Stephen L. Clark Vice President & Special Projects Director



Pacific EcoRisk is accredited in accordance with NELAP (ORELAP ID 4043). Pacific EcoRisk certifies that the test results reported herein conform to the most current NELAP requirements for parameters for which accreditation is required and available. Any exceptions to NELAP requirements are noted, where applicable, in the body of the report. This report shall not be reproduced, except in full, without the written consent of Pacific EcoRisk. This testing was performed under Lab Order 24035.



NPDES Compliance Summary

Lehigh Southwest Cement Company Permanente Facility Chronic Toxicity for SFBRWQCB Reporting Testing Facility: Pacific EcoRisk 2250 Cordelia Rd. Fairfield, CA 94534

| Lehigh Pond 4A | Chronic Toxicity Test Species: | Ceriodaphnia dubia |
|--|--------------------------------|--------------------------|
| Lenigh I ond 4A | Test Protocol: | EPA-821-R-02-013 |
| Sampling Dates: April 13, 15, and 17, 2015 | Dilution Series: | 6.25, 12.5, 25, 50, 100% |
| Test Dates: April 14-20, 2015 | Test Endpoint: | Survival, Reproduction |

| | | Currei | nt Pond 4A S | Site Water T | est I | Oata. | | |
|--|-------------|-----------------|--------------|--|-------|---------------|------|------------|
| Site Water Concentration % S | | % Survival | | Mean Reproduction (# neonates /female) | | | | |
| Har | dness Bla | nk | | 100 | | | 23.9 |) * |
| La | ab Contro | 1 | | 100 | | | 37. | 2 |
| | 6.25% | | | 100 | | | 31. | 0 |
| | 12.5% | | | 100 | | | 35. | 8 |
| | 25% | | | 90 | | | 28. | 0 |
| | 50% | | | 100 | | | 32. | 1 |
| | 100% | | | 100 | | 22.5* | | |
| | | Current l | Pond 4A Site | Water Test | End | lpoints. | | |
| Endpoint | NOEC | EC15-IC15 | EC25-IC25 | EC40-IC40 | EC | C50-IC50 | TUc | TUc Method |
| Survival | 100% | >100% | >100% | >100% | > | - 100% | <1 | 100/EC25 |
| Reproduction | 50% | 19.1% | 64.2% | >100% | > | >100% | 1.6 | 100/IC25 |
| Lab C | ontrol Surv | ival (after ~96 | 6 hrs) | 100% | | | | |
| 100% Site Water Survival (after ~96 hrs) | | ~96 hrs) | 100% | | | | | |

^{*} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

| | Summary of 11 Test Window for Ceriodaphnia dubia: Pond 4A | | | | | |
|-----------|---|----------------|---------------|------|----------------|----------|
| Test # | Sample Dates | NOEC (%) | EC25 or IC25 | TUc | 96-hr Survival | Comments |
| 1 | Mar 25, 27, & 29, 2013 | <6.25% (repro) | 6.1% (repro) | 16.5 | 10% | |
| 2 | May 6, 8, & 10, 2013 | <6.25% (repro) | 2.9% (repro) | 34.7 | 80% | |
| 3 | Dec 9, 11, & 13, 2013 | 100% (repro) | >100% (repro) | <1 | 100% | |
| 4 | Mar 10, 12, & 14, 2014 | 25% (repro) | 4.81% (repro) | 20.8 | 0% | |
| 5 | Apr 7, 9, & 11, 2014 | 6.25% (repro) | 8.4% (repro) | 11.9 | 0% | |
| 6 | Sept 22, 24, & 26, 2014 | 50% (repro) | >100% (repro) | <1 | 100% | |
| 7 | Nov 10, 12, & 14, 2014 | 100% (repro) | >100% (repro) | <1 | 100% | |
| 8 | Jan 19, 21, & 23, 2015 | 25% (repro) | 40.1% (repro) | 2.5 | 100% | |
| 9 | Apr 13, 15, & 17, 2015 | 50% (repro) | 64.2% (repro) | 1.6 | 100% | |
| 10 | | | | | | |
| 11 | | | | | | |



NPDES Compliance Summary

Lehigh Southwest Cement Company Permanente Facility Chronic Toxicity for SFBRWQCB Reporting Testing Facility: Pacific EcoRisk 2250 Cordelia Rd. Fairfield, CA 94534

| Lehigh Pond 13 | Chronic Toxicity Test Species: | Ceriodaphnia dubia | |
|--|--------------------------------|--------------------------|--|
| Lenigh I ond 13 | Test Protocol: | EPA-821-R-02-013 | |
| Sampling Dates: April 13, 15, and 17, 2015 | Dilution Series: | 6.25, 12.5, 25, 50, 100% | |
| Test Dates: April 14-20, 2015 | Test Endpoint: | Survival, Reproduction | |

| | Current Pond 13 Site Water Test Data. | | | | | | | |
|--------------------------------------|--|-----------|--------------|------------|-----|--|------|------------|
| Site Wate | er Concen | tration | % 5 | % Survival | | Mean Reproduction (# neonates /female) | | |
| Har | dness Bla | nk | | 100 | | | 23.9 |)* |
| La | ab Contro | 1 | | 100 | | | 33. | 6 |
| | 6.25% | | | 100 | | | 30. | 0 |
| | 12.5% | | | 100 | | | 31. | 5 |
| | 25% | | | 100 | | | 26. | 6 |
| | 50% | | | 90 | | | 18.0 |)* |
| | 100% | | | 100 | | | 19.8 | } * |
| | | Current 1 | Pond 13 Site | Water Test | End | points. | | |
| Endpoint | NOEC | EC15-IC15 | EC25-IC25 | EC40-IC40 | EC | C50-IC50 | TUc | TUc Method |
| Survival | 100% | >100% | >100% | >100% | > | 100% | <1 | 100/EC25 |
| Reproduction | 25% | 19.1% | 29.5% | 45.9% | > | 100% | 3.4 | 100/IC25 |
| Lab Control Survival (after ~96 hrs) | | | 100% | | | | | |
| 100% Si | 100% Site Water Survival (after ~96 hrs) | | | 100% | | | | |

^{*} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

| | Summary of 11 Test Window for Ceriodaphnia dubia: Pond 13 | | | | | | |
|--------|---|----------------|---------------|------|----------------|----------|--|
| Test # | Sample Dates | NOEC (%) | EC25 or IC25 | TUc | 96-hr Survival | Comments | |
| 1 | Mar 25, 27, & 29, 2013 | <6.25% (repro) | 3.7% (repro) | 27.3 | 30% | | |
| 2 | May 6, 8, & 10, 2013 | 50% (repro) | 6.1% (repro) | 16.4 | 100% | | |
| 3 | Dec 9, 11, & 13, 2013 | 100% (repro) | >100% (repro) | <1 | 100% | | |
| 4 | Mar 14 & 18, 2014 | 50% (repro) | 48% (repro) | 2.1 | 100% | | |
| 5 | Dec 8, 10, & 12, 2014 | 100% (repro) | 43.9% (repro) | 2.3 | 100% | | |
| 6 | Jan 19, 21, & 23, 2015 | 100% (repro) | >100% (repro) | <1 | 100% | | |
| 7 | Apr 13, 15, & 17, 2015 | 25% (repro) | 29.5% (repro) | 3.4 | 100% | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | _ | | | | | |
| 11 | | | | | | | |



NPDES Compliance Summary

Lehigh Southwest Cement Company Permanente Facility Chronic Toxicity for SFBRWQCB Reporting Testing Facility: Pacific EcoRisk 2250 Cordelia Rd. Fairfield, CA 94534

| Lehigh Pond 14 | Chronic Toxicity Test Species: | Ceriodaphnia dubia |
|--|--------------------------------|--------------------------|
| Lenigh I ond 14 | Test Protocol: | EPA-821-R-02-013 |
| Sampling Dates: April 13, 15, and 17, 2015 | Dilution Series: | 6.25, 12.5, 25, 50, 100% |
| Test Dates: April 14-20, 2015 | Test Endpoint: | Survival, Reproduction |

| Current Pond 14 Site Water Test Data. | | | | | | | | |
|---------------------------------------|-----------|------------|--------------|--|-------|----------|-----|------------|
| Site Water Concentration | | % Survival | | Mean Reproduction (# neonates /female) | | | | |
| Har | dness Bla | nk | | 100 | | 23.9* | | |
| La | ab Contro | 1 | | 100 | | | 37. | 5 |
| | 6.25% | | | 90 | | | 35. | 0 |
| | 12.5% | | | 100 | | 33.7 | | |
| | 25% | | | 100 | | 37.8 | | |
| | 50% | | 100 | | 30.7 | | | |
| | 100% | | 100 | | 23.0* | | | |
| | | Current 1 | Pond 14 Site | Water Test | End | points. | | |
| Endpoint | NOEC | EC15-IC15 | EC25-IC25 | EC40-IC40 | EC | C50-IC50 | TUc | TUc Method |
| Survival | 100% | >100% | >100% | >100% | > | >100% | <1 | 100/EC25 |
| Reproduction | 50% | 43.9% | 66.7% | >100% | > | >100% | 1.5 | 100/IC25 |
| Lab Control Survival (after ~96 h | | 6 hrs) | 100% | | | | | |
| 100% Site Water Survival (after ~96 | | | -96 hrs) | 100% | | | | |

^{*} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

| | Summary of 11 Test Window for Ceriodaphnia dubia: Pond 14 | | | | | | |
|--------|---|--------------|---------------|-----|----------------|----------|--|
| Test # | Sample Dates | NOEC (%) | EC25 or IC25 | TUc | 96-hr Survival | Comments | |
| 1 | Mar 25, 27, & 29, 2013 | 25% (repro) | 39.6% (repro) | 2.5 | 30% | | |
| 2 | May 6, 8, & 10, 2013 | 100% | 87.1% (repro) | 1.1 | 100% | | |
| 3 | Dec 9, 11, & 13, 2013 | 100% (repro) | >100% (repro) | <1 | 100% | | |
| 4 | Mar 14 & 18, 2014 | 100% (repro) | >100% (repro) | <1 | 100% | | |
| 5 | Apr 7, 9, & 11, 2014 | 100% (repro) | >100% (repro) | <1 | 100% | | |
| 6 | Sept 22, 24, & 26, 2014 | 100% (repro) | >100% (repro) | <1 | 100% | | |
| 7 | Nov 10, 12, & 14, 2014 | 100% (repro) | >100% (repro) | <1 | 100% | | |
| 8 | Jan 19, 21, & 23, 2015 | 100% (repro) | >100% (repro) | <1 | 100% | | |
| 9 | Apr 13, 15, & 17, 2015 | 50% (repro) | 66.7% (repro) | 1.5 | 100% | | |
| 10 | | | | | | | |
| 11 | | | | | | | |



Evaluation of the Chronic Toxicity of Lehigh Permanente Cement Plant Site Water Samples

Samples collected April 13, 15, and 17, 2015

Prepared For

Lehigh Southwest Cement Company 24001 Stevens Creek Boulevard Cupertino, CA 95014

Prepared By

Pacific EcoRisk, Inc. 2250 Cordelia Rd. Fairfield, CA 94534

May 2015



Evaluation of the Chronic Toxicity of Lehigh Permanente Cement Plant Site Water Samples

Samples collected April 13, 15, and 17, 2015

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1. INTRODUCTION

Under contract to the Lehigh Southwest Cement Company, Pacific EcoRisk (PER) conducted an evaluation of the chronic toxicity of Lehigh Southwest Cement Company Permanente Facility (Lehigh) water samples from three sites (designated Pond 4A, Pond 13, and Pond 14), and influent (ITS Influent) and effluent (ITS Effluent) from a Pilot Plant. This evaluation consisted of performing the US EPA short-term chronic 3-brood (6-8 day) survival and reproduction test with the crustacean *Ceriodaphnia dubia*. These toxicity tests were conducted on samples collected on April 13, 15, and 17, 2015. In order to assess the sensitivity of the organisms to chemical stress, a reference toxicant test was performed. This report describes the performance and results of these tests.

2. CHRONIC TOXICITY TEST PROCEDURES

The method used in conducting the chronic toxicity tests followed the guidance established by the following EPA manual:

• "Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition" (EPA-821-R-02-013).

2.1 Sample Receipt and Handling

On April 13, 15, and 17, five Lehigh water samples (designated Pond 4A, Pond 13, Pond 14, ITS Influent, and ITS Effluent) were collected into appropriately cleaned sample containers. These samples were transported on the day of collection, on ice and under chain-of-custody, to the PER testing laboratory in Fairfield, CA. Upon receipt at the testing laboratory, aliquots of each water sample were collected for analysis of initial water quality characteristics (Table 1), with the remainder of each sample being stored at 0-6°C except when being used to prepare test solutions.

The chain-of-custody records for the collection and delivery of the samples are presented in Appendix A.



| | Table 1. Initial water quality characteristics of the Lehigh site water samples. | | | | | | | |
|--------------|--|-------|------|----------------|----------------------|--------------------|----------------------|------------------------------|
| Sample ID | Sample Receipt Date | Temp. | рН | D.O. (mg/L) | Alkalinity (mg/L) | Hardness (mg/L) | Conductivity (µS/cm) | Total Ammonia (mg/L N) |
| | 4/13/15 | 4.7 | 7.61 | 7.2 | 192 | 746 | 1323 | <1.0 |
| Pond 4A | 4/15/15 | 1.2 | 7.41 | 6.4 | 195 | 747 | 1351 | <1.0 |
| | 4/17/15 | 7.3* | 7.84 | 8.5 | 173 | 607 | 1281 | <1.0 |
| | 4/13/15 | 3.3 | 8.23 | 9.1 | 191 | 736 | 1316 | <1.0 |
| Pond 13 | 4/15/15 | 0.4 | 7.88 | 8.9 | 196 | 740 | 1345 | <1.0 |
| | 4/17/15 | 7.9* | 8.32 | 8.6 | 187 | 690 | 1279 | <1.0 |
| | 4/13/15 | 3.4 | 7.90 | 8.8 | 192 | 728 | 1342 | <1.0 |
| Pond 14 | 4/15/15 | 0.6 | 7.96 | 8.5 | 193 | 728 | 1353 | <1.0 |
| | 4/17/15 | 11.0* | 7.97 | 8.4 | 204 | 722 | 1351 | <1.0 |
| | 4/13/15 | 5.4 | 7.63 | 9.4 | 170 | 748 | 1333 | <1.0 |
| ITS Influent | 4/15/15 | 0.7 | 7.79 | 8.9 | 195 | 746 | 1350 | <1.0 |
| | 4/17/15 | 8.3* | 7.88 | 8.6 | 197 | 704 | 1332 | <1.0 |
| ITS Effluent | 4/13/15 | 13.3* | 7.20 | 3.0 | 196 | 742 | 1331 | <1.0 |
| | 4/15/15 | 8.3* | 7.34 | 1.6 | 208 | 758 | 1324 | <1.0 |
| | 4/17/15 | 7.3* | 7.44 | 5.0 | 209 | 730 | 1318 | <1.0 |

^{*} This sample was transported and delivered on ice the day of sample collection.

2.2 Survival and Reproduction Toxicity Testing with Ceriodaphnia dubia

The short-term chronic *C. dubia* test consists of exposing individual females to a series of sample dilutions for the length of time it takes for the Control treatment females to produce 3 broods (typically 6-8 days), after which effects on survival and reproduction are evaluated. The specific procedures used in this testing are described below.

The Lab Water Control medium for this testing was modified EPA synthetic moderately hard water amended with 5% filtered ambient water from a clean reference site. The Lab Water Control medium and the samples were used to prepare test solutions at test treatment concentrations of 6.25%, 12.5%, 25%, 50%, and 100% sample for each sample. At the request of the client, an additional Hardness Blank (consisting Type 1 water [reverse-osmosis, de-ionized water] amended with reagent-grade chemicals to a nominal hardness of 745 mg/L) was prepared and tested; prior to use, the Hardness Blank was filtered to remove any insoluble particulate material. For each test treatment, the test solution was amended with the alga *Selenastrum capricornutum* and Yeast-Cerophyll®-Trout (YCT) food to provide food for the test organisms. "New" water quality characteristics (pH, dissolved oxygen [D.O.], and conductivity) were measured on these food-amended test solutions prior to use in these tests.

There were 10 replicates for each test treatment, each replicate consisting of 15 mL of test solution in a 30-mL plastic cup. These "3-brood" tests were initiated by allocating one neonate (<24 hrs old, and within 8 hrs of age) *C. dubia*, obtained from in-house laboratory cultures, into each replicate cup. The test replicate cups were placed into a temperature-controlled room at 25°C, under cool white fluorescent lighting on a 16L:8D photoperiod.

Each day of the tests, fresh test solutions were prepared and characterized as before, and a "new" set of replicate cups was prepared. The original test replicate cups were examined, with surviving "original" individual organisms being transferred to the corresponding new cup. The contents of each of the remaining "old" replicate cups was carefully examined and the number of neonate offspring produced by each original organism was determined, after which the "old" water quality characteristics (pH, D.O., and conductivity) were measured for the old media from one randomly-selected replicate at each treatment.

After it was determined that $\geq 60\%$ of the *C. dubia* in a Lab Water Control treatment had produced their third brood of offspring, the corresponding site water test was terminated. The resulting survival and reproduction (number of offspring) data were analyzed to evaluate any impairment caused by the samples; all statistical analyses were performed using the CETIS® statistical software (TidePool Scientific, McKinleyville, CA).

2.2.1 Reference Toxicant Testing of the Ceriodaphnia dubia

In order to assess the sensitivity of the test organisms to toxic stress, a reference toxicant test was performed concurrently with the site water tests. The reference toxicant test was performed similarly to the site water tests except that test solutions consisted of Lab Water Control medium spiked with NaCl at test concentrations of 500, 1000, 1500, 2000, and 2500 mg/L. The resulting test response data were statistically analyzed to determine key dose-response point estimates (e.g., EC50); all statistical analyses were made using the CETIS® software. These response endpoints were then compared to the 'typical response' ranges established by the mean \pm 2 SD of the point estimates generated by the most recent previous reference toxicant tests performed by this lab.

3. RESULTS

3.1 Effects of Lehigh Samples on Ceriodaphnia dubia

3.1.1 Effects of Lehigh Pond 4A Site Water on Ceriodaphnia dubia

The results of this test are summarized below in Table 2. The survival EC25 was >100% site water, resulting in <1.0 survival TUc (where TUc = 100/EC25). The reproduction IC25 was 64.2% site water, resulting in 1.6 reproduction TUc (where TUc = 100/IC25).

The test data and summary of statistical analyses for this test are presented in Appendix B.

| Table 2. Effects of Lehigh Pond 4A site water on <i>Ceriodaphnia dubia</i> survival and reproduction. | | | | |
|---|-------------------------------|--|--|--|
| Site Water Treatment | Mean % Survival | Mean Reproduction (# neonates /female) | | |
| Hardness Blank | 100 | 23.9* | | |
| Lab Water Control | 100 | 37.2 | | |
| 6.25% | 100 | 31.0 | | |
| 12.5% | 100 | 35.8 | | |
| 25% | 90 | 28.0 | | |
| 50% | 100 | 32.1 | | |
| 100% | 100 | 22.5* | | |
| Summary | of Key Statistics | | | |
| NOEC = | 100% site water | 50% site water | | |
| TUc (TUc = 100/NOEC) = | 1.0 | 2.0 | | |
| Survival EC25 or Reproduction IC25 = | >100% site water ^a | 64.2% site water | | |
| TUc (TUc = 100/EC25 or 100/IC25) = | <1.0 | 1.6 | | |
| Survival EC50 or Reproduction IC50 = | >100% site water ^a | >100% site water | | |
| TUc (TUc = 100/EC50 or 100/IC50) = | <1.0 | <1.0 | | |

^{* -} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% site water.

3.1.2 Effects of Lehigh Pond 13 Site Water on Ceriodaphnia dubia

The results of this test are summarized below in Table 3. The survival EC25 was >100% site water, resulting in <1.0 survival TUc (where TUc = 100/EC25). The reproduction IC25 was 29.5%, resulting in 3.4 reproduction TUc (where TUc = 100/IC25).

The test data and summary of statistical analyses for this test are presented in Appendix C.

| Table 3. Effects of Lehigh Pond 13 site water on Ceriodaphnia dubia survival | | | | |
|--|-------------------------------|----------------------|--|--|
| and reproduction. | | | | |
| Site Water Treatment | Mean % Survival | Mean Reproduction | | |
| Site water Treatment | ivicali 70 Sulvival | (# neonates /female) | | |
| Hardness Blank | 100 | 23.9* | | |
| Lab Control | 100 | 33.6 | | |
| 6.25% | 100 | 30.0 | | |
| 12.5% | 100 | 31.5 | | |
| 25% | 100 | 26.6 | | |
| 50% | 90 | 18.0* | | |
| 100% | 100 | 19.8* | | |
| Summary | of Key Statistics | | | |
| NOEC = | 100% site water | 25% site water | | |
| TUc (TUc = 100/NOEC) = | 1.0 | 4.0 | | |
| Survival EC25 or Reproduction IC25 = | >100% site water ^a | 29.5% site water | | |
| TUc (TUc = 100/EC25 or 100/IC25) = | <1.0 | 3.4 | | |
| Survival EC50 or Reproduction IC50 = | >100% site water ^a | >100% site water | | |
| TUc (TUc = 100/EC50 or 100/IC50) = | <1.0 | <1.0 | | |

^{* -} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% site water.

3.1.3 Effects of Lehigh Pond 14 Site Water on Ceriodaphnia dubia

The results of this test are summarized below in Table 4. The survival EC25 was >100% site water, resulting in <1.0 survival TUc (where TUc = 100/EC25). The reproduction IC25 was 66.7%, resulting in 1.5 reproduction TUc (where TUc = 100/IC25).

The test data and summary of statistical analyses for this test, excluding outlier data, are presented in Appendix D; the summary of statistical analyses for this test, including outlier data, are presented in Appendix E.

| Table 4. Effects of Lehigh Pond 14 site water on <i>Ceriodaphnia dubia</i> survival and reproduction. | | | | |
|---|-------------------------------|----------------------|--|--|
| C'A. W.A. T. A. A. | M 0/ C1 | Mean Reproduction | | |
| Site Water Treatment | Mean % Survival | (# neonates /female) | | |
| Hardness Blank | 100 | 23.9* | | |
| Lab Control | 100 | 37.5 ^b | | |
| 6.25% | 90 | 35.0 ^b | | |
| 12.5% | 100 | 33.7 | | |
| 25% | 100 | 37.8 | | |
| 50% | 100 | 30.7 | | |
| 100% | 100 | 23.0* | | |
| Summary | of Key Statistics | | | |
| NOEC = | 100% site water | 50% site water | | |
| TUc (TUc = 100/NOEC) = | 1.0 | 2.0 | | |
| Survival EC25 or Reproduction IC25 = | >100% site water ^a | 66.7% site water | | |
| TUc (TUc = $100/EC_{25}$ or $100/IC_{25}$) = | <1.0 | 1.5 | | |
| Survival EC50 or Reproduction IC50 = | >100% site water ^a | >100% site water | | |
| TUc (TUc = $100/EC_{50}$ or $100/IC_{50}$) = | <1.0 | <1.0 | | |

^{* -} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% site water.

b - Statistical analyses indicated that the reproduction response for one of the replicates at this test treatment was a statistical outlier, and the results reported above are for the analyses of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

3.1.4 Effects of Lehigh ITS Influent on Ceriodaphnia dubia

The results of this test are summarized below in Table 5. The survival EC25 was >100% influent, resulting in <1.0 survival TUc (where TUc = 100/EC25). The reproduction IC25 was 34.3% influent, resulting in 2.9 reproduction TUc (where TUc = 100/IC25).

The test data and summary of statistical analyses for this test, excluding outlier data, are presented in Appendix F; the summary of statistical analyses for this test, including outlier data, are presented in Appendix G.

| Table 5. Effects of Lehigh ITS Influent on <i>Ceriodaphnia dubia</i> survival and reproduction. | | | | |
|---|-------------------|----------------------|--|--|
| | | Mean Reproduction | | |
| Influent Treatment | Mean % Survival | (# neonates /female) | | |
| Hardness Blank | 100 | 23.9* | | |
| Lab Control | 100 | 42.1 ^b | | |
| 6.25% | 90 | 36.4 | | |
| 12.5% | 100 | 38.9 | | |
| 25% | 100 | 37.8* b | | |
| 50% | 100 | 21.2* | | |
| 100% | 100 | 16.5* | | |
| Summary | of Key Statistics | | | |
| NOEC = | 100% influent | 12.5% influent | | |
| TUc (TUc = 100/NOEC) = | 1.0 | 8.0 | | |
| Survival EC25 or Reproduction IC25 = | >100% influent a | 34.3% influent | | |
| TUc (TUc = $100/EC_{25}$ or $100/IC_{25}$) = | <1.0 | 2.9 | | |
| Survival EC50 or Reproduction IC50 = | >100% influent a | 51.5% influent | | |
| TUc (TUc = $100/EC_{50}$ or $100/IC_{50}$) = | <1.0 | 1.9 | | |

^{* -} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% influent.

b - Statistical analyses indicated that the reproduction response for one of the replicates at this test treatment was a statistical outlier, and the results reported above are for the analyses of the test data excluding this outlier. As per EPA guidelines, the test data were analyzed both with and without the outlier, and the results of both sets of analyses are reported in the appendices.

3.1.5 Effects of Lehigh ITS Effluent on Ceriodaphnia dubia

The results of this test are summarized below in Table 6. The survival EC25 was >100% effluent, resulting in <1.0 survival TUc (where TUc = 100/EC25). The reproduction IC25 was 95.3% effluent, resulting in 1.1 reproduction TUc (where TUc = 100/IC25).

The test data and summary of statistical analyses for this test are presented in Appendix H.

| Table 6. Effects of Lehigh ITS Effluent on Ceriodaphnia dubia survival | | | | |
|--|-----------------------------|----------------------|--|--|
| and reproduction. | | | | |
| Effluent Treatment | Mean % Survival | Mean Reproduction | | |
| Efficient Heatment | ivicali % Survival | (# neonates /female) | | |
| Hardness Blank | 100 | 23.9* | | |
| Lab Control | 100 | 39.7 | | |
| 6.25% | 100 | 41.7 | | |
| 12.5% | 100 | 40.1 | | |
| 25% | 100 | 39.2 | | |
| 50% | 100 | 36.5 | | |
| 100% | 100 | 29.9* | | |
| Summary | of Key Statistics | | | |
| NOEC = | 100% effluent | 50% effluent | | |
| TUc (TUc = 100/NOEC) = | 1.0 | 2.0 | | |
| Survival EC25 or Reproduction IC25 = | >100% effluent ^a | 95.3% effluent | | |
| TUc (TUc = 100/EC25 or 100/IC25) = | <1.0 | 1.1 | | |
| Survival EC50 or Reproduction IC50 = | >100% effluent a | >100% effluent | | |
| TUc (TUc = 100/EC50 or 100/IC50) = | <1.0 | <1.0 | | |

^{* -} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

a - Due to the absence of significant mortalities, the EC point estimates could not be calculated, but can be determined by inspection to be >100% effluent.

4. AQUATIC TOXICITY DATA QUALITY CONTROL

Four QC measures were assessed during the toxicity testing:

- Maintenance of acceptable test conditions;
- Negative Control testing;
- Assessment of concentration response relationship; and
- Positive Control (reference toxicant) testing.

Maintenance of Acceptable Test Conditions

The April 13 and 15 samples of ITS Effluent had D.O. concentrations of 3.0 mg/L and 1.6 mg/L, respectively. Per the EPA method manual, the samples were aerated until D.O. concentrations reached >4 mg/L before use in test solution preparation. All other test conditions (pH, D.O., temperature, etc.) were within acceptable limits for these tests. All analyses were performed according to laboratory Standard Operating Procedures.

Negative Control Testing

The responses at the Lab Control treatments were acceptable.

Concentration Response Relationships

There were valid concentration-response relationships for the site water and reference toxicant tests (EPA-821-B-00-004).

Positive Control Testing - Reference Toxicant Toxicity

The results of this test are summarized below in Table 7. The survival EC50 and reproduction IC50 for these tests were consistent with the "typical response" ranges established by the reference toxicant test database for this species, indicating that these test organisms were responding to toxicant stress in a typical and consistent fashion.

The test data and summary of statistical analyses for this test are presented in Appendix I.

| Table 7. Reference toxicant testing: effects of NaCl on Ceriodaphnia dubia. | | | | |
|---|-----------------------|-----------------------|--|--|
| NaCl Treatment (mg/L) | Mean % Survival | Mean Reproduction | | |
| Naci Heatilietit (Ilig/L) | Weall % Survival | (# neonates/female) | | |
| Lab Control | 100 | 34.8 | | |
| 500 | 100 | 34.6 | | |
| 1000 | 100 | 30.4 | | |
| 1500 | 80 | 18.3* | | |
| 2000 | 60 | 6.7* | | |
| 2500 | 0* | - | | |
| Summary of Statistics | | | | |
| Survival EC50 or Reproduction IC50 = | 1900 mg/L NaCl | 1540 mg/L NaCl | | |
| "Typical Response" = | 1706 - 2273 mg/L NaCl | 1339 - 1687 mg/L NaCl | | |

^{*} The response at this test treatment was significantly less than the Lab Control treatment response (p < 0.05).

5. SUMMARY AND CONCLUSIONS

Chronic Effects of Lehigh Pond 4A Site Water on Ceriodaphnia dubia

The survival EC25 was >100% site water, resulting in <1.0 TUc. The reproduction IC25 was 64.2% site water, resulting in 1.6 TUc.

| Ceriodaphnia dubia Test Endpoint = | Survival | Reproduction |
|--------------------------------------|------------------|------------------|
| Survival EC25 or Reproduction IC25 = | >100% site water | 64.2% site water |
| TUc = | <1.0 | 1.6 |

Chronic Effects of Lehigh Pond 13 Site Water on Ceriodaphnia dubia

The survival EC25 was >100% site water, resulting in <1.0 TUc. The reproduction IC25 was 29.5% site water, resulting in 3.4 TUc.

| Ceriodaphnia dubia Test Endpoint = | Survival | Reproduction |
|--------------------------------------|------------------|------------------|
| Survival EC25 or Reproduction IC25 = | >100% site water | 29.5% site water |
| TUc = | <1.0 | 3.4 |

Chronic Effects of Lehigh Pond 14 Site Water on Ceriodaphnia dubia

The survival EC25 was >100% site water, resulting in <1.0 TUc. The reproduction IC25 was 66.7% site water, resulting in 1.5 TUc.

| Ceriodaphnia dubia Test Endpoint = | Survival | Reproduction |
|--------------------------------------|------------------|------------------|
| Survival EC25 or Reproduction IC25 = | >100% site water | 66.7% site water |
| TUc = | <1.0 | 1.5 |

Chronic Effects of Lehigh ITS Influent on Ceriodaphnia dubia

The survival EC25 was >100% influent, resulting in <1.0 TUc. The reproduction IC25 was 34.3% influent, resulting in 2.9 TUc.

| Ceriodaphnia dubia | Survival | Reproduction |
|--------------------------------------|----------------|----------------|
| Survival EC25 or Reproduction IC25 = | >100% influent | 34.3% influent |
| TUc = | <1.0 | 2.9 |

Chronic Effects of Lehigh ITS Effluent on Ceriodaphnia dubia

The survival EC25 was >100% effluent, resulting in <1.0 TUc. The reproduction IC25 was 95.3% effluent, resulting in 1.1 TUc.

| Ceriodaphnia dubia | Survival | Reproduction |
|--------------------------------------|----------------|----------------|
| Survival EC25 or Reproduction IC25 = | >100% effluent | 95.3% effluent |
| TUc = | <1.0 | 1.1 |

Appendix A

Chain-of-Custody Records for the Collection and Delivery of the Lehigh Samples

Pacific EcoRisk 2250 Cordelia Rd., Fairfield, CA 94534 (707) 207-7760 FAX (707) 207-7916

CHAIN-OF-CUSTODY RECORD

| Results To: | Robertsor | ı-Br | yan, l | Inc | | Invoice To: | Lehigh | Southwest Cement Co | | | REC | UES | ΓED A | NALYS | IS | | 7 |
|-----------------|-------------|-------|-----------|-----------|--------------|-------------|--|---------------------|------------------------------|----------|----------|--------|-------|--------|----------|--|----------|
| Address: | 9888 Ken | t Str | reet | | | Address: | P.O. Bo | x 660140 | | | | | | | | | |
|] [| Elk Grove | e, C | A 95 | 624 | |] | Dallas, ' | TX 75266 | eriodapnia dubia Surival and | 0.5 | | | | | | | Т |
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| Phone: | (916) 405 | -891 | 18 | | | Phone: | 925-244 | -6570 |] S | ا ک | | | | | | | 1 |
| Attn: | Paul Bedo | ore | | | - | Attn: | Greg Kı | парр | bia | <u> </u> | | | | | | | 1 |
| E-mail: | paul@rob | erts | on-b | ryan.com | 1 | E-mail: | greg.kn | app@hanson.biz | 700 | ţi. | | | | | | | 1 |
| Project Name: | Lehigh So | outh | west | Cement - | Permanen | te Creek | | | iğ | onp | | | | | | | 1 |
| P.O.#/Ref: | | | | | | | | | eriodapnia dubia | pro | | | | | | | 1 |
| Client Sam | nle ID | Sar | mple | Sample | Sample | Grab/ | | Container | Ş | ~ | | | | | | | 1 |
| Chefft San | ihie in | _ | ate | Time | Matrix* | Comp | Number | Туре | Ľ | | | | | | | | |
| Pond 4A | | 4/1 | 3/15 | 9130 | FW | Comp | 1 | 2.5-gal LDPE Cube | × | (| | | | | | | 7 |
| Pond 13 | | | | 8145 | FW | Grab | 1 | 2.5-gal LDPE Cube | × | | | | | | | | 7 |
| Pond 14 | | | | 8102 | FW | Grab | 1 | 2.5-gal LDPE Cube | × | , | | | | | | | 1 |
| ITS Influent | | | | 9110 | FW | Comp | 1 | 2.5-gal LDPE Cube | × | | | | | | | | 1 |
| ITS Effluent | | 1 | V | 9140 | FW | Comp | 1 2.5-gal LDPE Cube | | | , | | | | | | | 1 |
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*Example Matrix Codes: (EFF - Effluent) (FW = Freshwater); (SW = Saltwater); (WW = Wastewater); (STRMW = Stormwater); (SED = Sediment); or other

Pacific EcoRisk 2250 Cordelia Rd., Fairfield, CA 94534 (707) 207-7760 FAX (707) 207-7916

CHAIN-OF-CUSTODY RECORD

| Results To: | | | Inc | | Invoice To: | Lehigh | Southwest Cement Co | | | REQ | UEST | TED AN | NALYS | S | |
|----------------|------------|--------------|----------|----------|-------------|----------|---|--|---|--------------|-------|--------------------|-------|--------|----------|
| Address: | 9888 Ke | nt Street | | | Address: | P.O. Bo | ox 660140 | - | | | | | | T | |
| | Elk Grov | ve, CA 95 | 624 | |] | Dallas, | TX 75266 | and 2.0 | | | | | | | 8 |
| | | | | | | | | Suriva A 1002 | | | | | | | |
| Phone: | (916) 40 | 5-8918 | | | Phone: | 925-244 | 1-6570 | Sul A 1 | | | | | | | |
| Attn: | Paul Bec | lore | | | Attn: | Greg Kı | napp | <i>ibia</i> ', EF | | | | | 8 | | |
| E-mail: | paul@ro | bertson-b | ryan.com | 1 | E-mail: | greg.kn | app@hanson.biz | ig of | | | | | | | |
| Project Name: | Lehigh S | Southwest | Cement - | Permanen | te Creek | | - | in on p | 3 | | | | | | |
| P.O.#/Ref: | | | | | | | | <i>eriodapnia dubia</i> Surival ar Reproduction, EPA 1002.0 | | | | | | | |
| Client San | nnle ID | Sample | Sample | Sample | Grab/ | | Container | # 6 | | | | | | | |
| | | Date | Time | Matrix* | Comp | Number | Туре | <u> </u> | _ | | | | | | |
| Pond 4A | | 4-15-15 | | FW | Comp | 1 | 2.5-gal LDPE Cube | х | | | | | | | |
| Pond 13 | | 1 | 9:05 | FW | Grab | 1 | 2.5-gal LDPE Cube | х | | | | | | | |
| Pond 14 | | | 8:16 | FW | Grab | 1 | 2.5-gal LDPE Cube | х | | | | | | | |
| ITS Influent | | | 9125 | FW | Comp | 1 | 2.5-gal LDPE Cube | х | | | | | | | |
| ITS Effluent | | 4 | 9143 | FW | Comp | 1 | 2.5-gal LDPE Cube | × | | | | | | | |
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| Samples colle | ected by: | P Bedore / | B Giudic | e | | | | | | | 12904 | | | | |
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^{*}Example Matrix Codes: (EFF - Effluent) (FW = Freshwater); (SW = Saltwater); (WW = Wastewater); (STRMW = Stormwater); (SED = Sediment); or other

Pacific EcoRisk 2250 Cordelia Rd., Fairfield, CA 94534 (707) 207-7760 FAX (707) 207-7916

CHAIN-OF-CUSTODY RECORD

| | Results To: | Robertson | | | | | | Southwest Cement Co | | REQUES | STED A | NAL | YSIS | | |
|----|----------------|--------------|-----------|-----------|----------|----------|---------|---------------------|---|----------|--------|-------|------|---------|----|
| | Address: | 9888 Ken | t Street | | | | | ox 660140 | | | | | | | |
| | | Elk Grove | e, CA 95 | 624 | | | Dallas, | TX 75266 | an O. | | | | 8 | | |
| | | | | | | | | 350-5 | iva 000 | | | | | | |
| | Phone: | (916) 405 | -8918 | | | Phone: | 925-244 | 1-6570 | Sur A | | | | | | |
| | Attn: | Paul Bedo | ore | | | Attn: | Greg K | napp | ibia 1, EF | | | | | | |
| | E-mail: | paul@rot | ertson-b | ryan.com | | E-mail: | greg.kr | app@hanson.biz | <i>eriodapnia dubia</i> Surival and Reproduction, EPA 1002.0 | | | | | | |
| 1 | Project Name: | Lehigh So | outhwest | Cement - | Permanen | te Creek | | | npo | | | | | | |
| | P.O.#/Ref: | | | | | | | | pude ebud | | | | * | | |
| | Client San | nnie ID | Sample | | Sample | Grab/ | | Container | o e | | | | | | |
| | | | Date | Time | Matrix* | | Number | Туре | | | | | | | |
| • | Pond 4A | | 4-17-19 | 9:17 | FW | Comp | 1 | 2.5-gal LDPE Cube | X | | | | | | |
| 2 | Pond 13 | | | 8:05 | FW | Grab | 1 | 2.5-gal LDPE Cube | x | | | | | \perp | |
| 3 | Pond 14 | | | 7:30 | FW | Grab | 1 | 2.5-gal LDPE Cube | x | | | | | | |
| 4 | ITS Influent | | | B:50 | FW | Comp | 1 | x | | | | | | | |
| 5 | ITS Effluent | | - (| 9:10 | FW | Comp | × | | | | | | | | |
| 6 | | | | | | | | | | | | | | | |
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| | Samples colle | ected by: P | Bedore / | B Giudice | • | | | | | | | TWO I | | 1000 | |
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*Example Matrix Codes: (EFF - Effluent) (FW = Freshwater); (SW = Saltwater); (WW = Wastewater); (STRMW = Stormwater); (SED = Sediment); or other

Appendix B

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Lehigh Pond 4A Site Water to Ceriodaphnia dubia

CETIS Summary Report

Report Date: Test Code: 11 May-15 14:57 (p 1 of 2)

62227 | 02-5504-6273

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk Batch ID: 07-3943-5730 Test Type: Reproduction-Survival (7d) Drew Gantner Analyst: Start Date: 14 Apr-15 15:30 EPA-821-R-02-013 (2002) Protocol: Diluent: **Laboratory Water** Ending Date: 20 Apr-15 15:50 Species: Ceriodaphnia dubia Brine: Not Applicable **Duration:** 6d 0h Source: In-House Culture Age: Sample ID: 21-0870-5968 Code: Pond 4A Client: Lehigh Permanente Sample Date: 14 Apr-15 15:30 Material: Site Water 24035 Project: Receive Date: 20 Apr-15 15:50 Source: Lehigh Permanente Sample Age: NA (4.7 °C) Station: Pond 4A **Comparison Summary** Analysis ID **Endpoint** TOEL **NOEL** LOEL **PMSD** TU Method 03-0661-5517 Reproduction 50 100 70.71 27.4% 2 Bonferroni Adi t Test 19-5946-0375 Survival 100 >100 NA Fisher Exact/Bonferroni-Holm Test NA 1 **Point Estimate Summary** Analysis ID **Endpoint** Level % 95% LCL 95% UCL TU Method 12-5551-4850 Reproduction IC5 3.05 1.31 25.3 32.78 Linear Interpolation (ICPIN) IC10 6.1 2.62 56.4 16.39 **IC15** 19.1 3.93 66.9 5.229 IC20 51.9 5.24 79.1 1.926 IC25 64.2 14.5 91.5 1.557 IC40 >100 N/A N/A <1 IC50 >100 N/A N/A <1 **Reproduction Summary** Count C-% Control Type Mean 95% LCL 95% UCL Min Max Std Err CV% Std Dev %Effect 0 Lab Water Contr 10 37.2 31 43.4 22 46 2.73 8.63 23.2% 0.0% 6.25 10 31 21.8 40.2 49 6 4.07 12.9 41.5% 16.7% 12.5 9 35.8 28.7 42.8 43 17 3.06 9.18 25.6% 3.82% 25 9 28 36.3 19.7 12 42 3.6 10.8 38.5% 24.7% 50 10 32.1 25.9 38.3 18 43 2.72 8.61 26.8% 13.7% 100 10 22.5 18.6 26.4 17 31 1.73 5.46 24.3% 39.5% **Survival Summary** C-% **Control Type** Count Mean 95% UCL 95% LCL Min Std Err CV% %Effect Max Std Dev 0 Lab Water Contr 10 1 0 0 0.0% 0.0% 6.25 10 1 1 1 1 0 0 1 0.0% 0.0% 12.5 10 1 1 1 1 0 0 0.0% 1 0.0% 25 10 0 0.9 0.674 0.316 1 1 0.1 10.0% 35.1% 50 10 1 1 1 1 1 0 0 0.0% 0.0%



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Report Date: Test Code: 24 Apr-15 15:18 (p 2 of 2)

62227 | 02-5504-6273

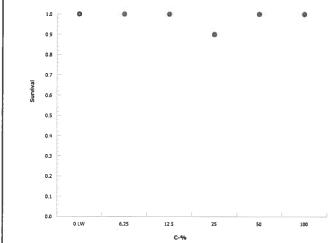
| | | | | | | | 162 | t Code: | | 02221 0 | 2-0004-027 |
|------------|----------------------|------------|---------|-------|-------|-------|-------|---------|-------|-----------|---------------------------------------|
| Ceriodap | hnia Survival and Re | production | on Test | | | | | | | Pacif | ic EcoRisk |
| Reproduc | tion Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 33 | 39 | 42 | 40 | 46 | 44 | 45 | 38 | 23 | 22 |
| 6.25 | | 26 | 34 | 21 | 27 | 45 | 49 | 44 | 32 | 26 | 6 |
| 12.5 | | 17 | 36 | 43 | 43 | 39 | | 42 | 37 | 41 | 24 |
| 25 | | 17 | 18 | 32 | 31 | 42 | 24 | 41 | | 35 | 12 |
| 50 | | 36 | 18 | 38 | 24 | 35 | 43 | 38 | 36 | 34 | 19 |
| 100 | | 17 | 25 | 26 | 26 | 29 | 19 | 31 | 17 | 18 | 17 |
| Survival [| Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12.5 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Survival I | Binomials | | | | | | | | | | · · · · · · · · · · · · · · · · · · · |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 6.25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 12.5 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 0/1 | 1/1 | 1/1 |
| 50 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 100 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |

CETIS Analytical Report

Report Date: Test Code: 24 Apr-15 14:52 (p 1 of 1)

62227 | 02-5504-6273

| Analysis ID: Analyzed: | 19-5946-0375 23 Apr-15 17:57 | 7 | Endpoint: S Analysis: S | Survival S <mark>TP 2</mark> x2 Conti | ngency Tabl | es | | S Version: al Results: | CETISv Yes | 1.8.7 | |
|---------------------------|---------------------------------|------|----------------------------|--|-------------|-----------|---------------|---------------------------|---------------|-------|----|
| Data Transfor | m | Zeta | Alt Hy | p Trials | Seed | | · | NOEL | LOEL | TOEL | TU |
| Untransformed | 1 | | C>T | NA | NA | | | 100 | >100 | NA | 1 |
| Fisher Exact/ | Bonferroni-Holm | Test | | | | | | | | | |
| Control | vs C-% | | Test St | at P-Value | P-Type | Decision | (a:5%) | | | | |
| Lab Water Cor | ntrol 6.25 | | 1 | 1.0000 | Exact | Non-Signi | ficant Effect | | | | |
| | 12.5 | | 1 | 1.0000 | Exact | Non-Signi | ficant Effect | | | | |
| | 25 | | 0.5 | 1.0000 | Exact | Non-Signi | ficant Effect | | | | |
| | 50 | | 1 | 1.0000 | Exact | Non-Signi | ficant Effect | | | | |
| | 100 | | 1 | 1.0000 | Exact | _ | ficant Effect | | | | |
| Data Summar | у | | | | | | | | | | |
| C-% | Control Type | NR | R | NR + R | Prop NR | Prop R | %Effect | | | | |
| 0 | Lab Water Cont | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 6.25 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 12.5 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 25 | | 9 | 1 | 10 | 0.9 | 0.1 | 10.0% | | | | |
| 50 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 100 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |



CETIS Analytical Report

Report Date:

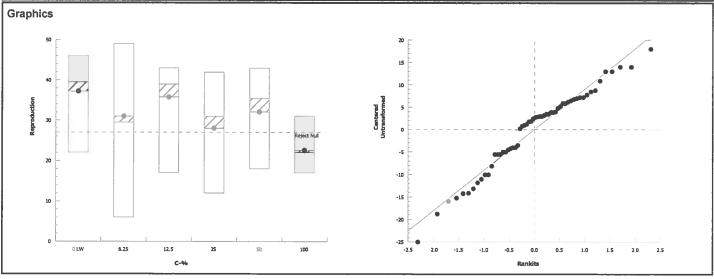
11 May-15 14:57 (p 1 of 1)

Test Code:

62227 | 02-5504-6273

| | | | | | | | | | | 1631 | Code: | | 02221 0 | 2-0004-0273 |
|-------------------|--------|---------------------|----------|---------------------|---------|---------------------------|----------|-----|---------|-------------|------------|-----------------|---------------------------------------|-------------|
| Ceriodaphnia Su | ırviva | I and Re | produ | ction Te | st | | | | | | | | Paci | fic EcoRisk |
| | | 1-5517 /-15 14:5 | | Endpoir Analysis | | oroduction ametric-Mul | tiple Co | mpa | rison | | S Version | | .8.7 | |
| Data Transform | | | Zeta | Alt | t Hyp | Trials | Seed | | | PMSD | NOEL | LOEL | TOEL | TU |
| Untransformed | | | NA | C | > T | NA | NA | | | 27.4% | 50 | 100 | 70.71 | 2 |
| Bonferroni Adj t | Test | | | | | | | | | | | | | |
| Control | vs C | -% | | Te | st Stat | Critical | MSD | DF | P-Value | P-Type | Decision | (a:5%) | | |
| Lab Water Contro | ol 6 | .25 | | 1.4 | 16 | 2.4 | 10.2 | 18 | 0.3770 | CDF | Non-Sign | ificant Effect | | |
| | 13 | 2.5 | | 0.3 | 326 | 2.4 | 10.5 | 17 | 1.0000 | CDF | Non-Sign | ificant Effect | t | |
| | 2 | 5 | | 2.1 | 11 | 2.4 | 10.5 | 17 | 0.1001 | CDF | Non-Sign | ificant Effect | t | |
| | 5 | 0 | | 1.2 | 2 | 2.4 | 10.2 | 18 | 0.5895 | CDF | _ | ificant Effect | | |
| | 1 | 00* | | 3.4 | 16 | 2.4 | 10.2 | 18 | 0.0027 | CDF | Significar | | | |
| Auxiliary Tests | - | | | : | | | | | | · | | | | <u> </u> |
| Attribute | T | est | | | | Test Stat | Critica | al | P-Value | Decision(| α:5%) | | | |
| Extreme Value | G | rubbs Ex | dreme | Value | | 2.75 | 3.19 | | 0.2612 | | s Detected | | | |
| ANOVA Table | | | | | | | | | | | | | | |
| Source | Sı | ım Squa | res | Me | ean Squ | ıare | DF | | F Stat | P-Value | Decision | (a:5 %) | | |
| Between | 14 | 05.169 | | 28 | 1.0337 | | 5 | | 3.11 | 0.0157 | Significar | nt Effect | | |
| Error | 47 | 00.556 | | 90 | .3953 | | 52 | | | | | | | |
| Total | 61 | 05.724 | | | | | 57 | | | | | | | |
| Distributional Te | sts | | | | | | | | | | | | | |
| Attribute | T | est | | | | Test Stat | Critica | al | P-Value | Decision(| a:1%) | | | |
| Variances | В | artlett Ec | uality | of Varian | ice | 6.33 | 15.1 | | 0.2757 | Equal Var | iances | | | |
| Distribution | S | hapiro-W | /ilk W I | Normality | / | 0.965 | 0.944 | | 0.0905 | Normal Di | stribution | | | |
| Reproduction St | ımma | ry | | | | | | | | | | <u></u> | · · · · · · · · · · · · · · · · · · · | |
| C-% Co | ontrol | Туре | Coun | t Me | ean | 95% LCL | 95% L | ICL | Median | Min | Max | Std Err | CV% | %Effect |
| 0 La | b Wat | er Contr | 10 | 37 | 2 | 31 | 43.4 | | 39.5 | 22 | 46 | 2.73 | 23.2% | 0.0% |

| Control Type | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
|-----------------|-------|------------------------------------|---|--|---|--|--|---|---|---|
| Lab Water Contr | 10 | 37.2 | 31 | 43.4 | 39.5 | 22 | 46 | 2.73 | 23.2% | 0.0% |
| | 10 | 31 | 21.8 | 40.2 | 29.5 | 6 | 49 | 4.07 | 41.5% | 16.7% |
| | 9 | 35.8 | 28.7 | 42.8 | 39 | 17 | 43 | 3.06 | 25.6% | 3.82% |
| | 9 | 28 | 19.7 | 36.3 | 31 | 12 | 42 | 3.6 | 38.5% | 24.7% |
| | 10 | 32.1 | 25.9 | 38.3 | 35.5 | 18 | 43 | 2.72 | 26.8% | 13.7% |
| | 10 | 22.5 | 18.6 | 26.4 | 22 | 17 | 31 | 1.73 | 24.3% | 39.5% |
| | | Lab Water Contr 10 10 9 9 | Lab Water Contr 10 37.2 10 31 9 35.8 9 28 10 32.1 | Lab Water Contr 10 37.2 31 10 31 21.8 9 35.8 28.7 9 28 19.7 10 32.1 25.9 | Lab Water Contr 10 37.2 31 43.4 10 31 21.8 40.2 9 35.8 28.7 42.8 9 28 19.7 36.3 10 32.1 25.9 38.3 | Lab Water Contr 10 37.2 31 43.4 39.5 10 31 21.8 40.2 29.5 9 35.8 28.7 42.8 39 9 28 19.7 36.3 31 10 32.1 25.9 38.3 35.5 | Lab Water Contr 10 37.2 31 43.4 39.5 22 10 31 21.8 40.2 29.5 6 9 35.8 28.7 42.8 39 17 9 28 19.7 36.3 31 12 10 32.1 25.9 38.3 35.5 18 | Lab Water Contr 10 37.2 31 43.4 39.5 22 46 10 31 21.8 40.2 29.5 6 49 9 35.8 28.7 42.8 39 17 43 9 28 19.7 36.3 31 12 42 10 32.1 25.9 38.3 35.5 18 43 | Lab Water Contr 10 37.2 31 43.4 39.5 22 46 2.73 10 31 21.8 40.2 29.5 6 49 4.07 9 35.8 28.7 42.8 39 17 43 3.06 9 28 19.7 36.3 31 12 42 3.6 10 32.1 25.9 38.3 35.5 18 43 2.72 | Lab Water Contr 10 37.2 31 43.4 39.5 22 46 2.73 23.2% 10 31 21.8 40.2 29.5 6 49 4.07 41.5% 9 35.8 28.7 42.8 39 17 43 3.06 25.6% 9 28 19.7 36.3 31 12 42 3.6 38.5% 10 32.1 25.9 38.3 35.5 18 43 2.72 26.8% |



CETIS Analytical Report

Report Date:

11 May-15 14:57 (p 1 of 1)

Test Code:

62227 | 02-5504-6273

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Analysis ID: 12-5551-4850 Analyzed: 11 May-15 14:57 **Endpoint:** Reproduction

Linear Interpolation (ICPIN)

CETIS Version: CETISv1.8.7 Official Results: Yes

| | Internolation Ontions |
|---------|------------------------|
| llinear | Internalation ()ntions |

| X Transform | Y Transform | Seed | Resamples | Exp 95% CL | Method |
|-------------|-------------|------|-----------|------------|--------|
| | | | | | |

Analysis:

Two-Point Interpolation Yes Linear Linear 598193 200

Residual Analysis

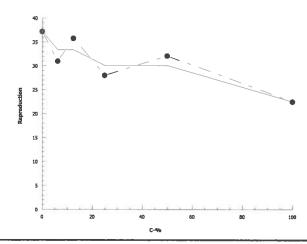
| Attribute | Method | Test Stat | Critical | P-Value | Decision(α:5%) |
|---------------|----------------------|-----------|----------|---------|----------------------|
| Extreme Value | Grubbs Extreme Value | 2.75 | 3.19 | 0.2612 | No Outliers Detected |

Point Estimates

| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UC |
|-------|------|---------|---------|-------|---------|--------|
| IC5 | 3.05 | 1.31 | 25.3 | 32.78 | 3.952 | 76.37 |
| IC10 | 6.1 | 2.62 | 56.4 | 16.39 | 1.775 | 38.19 |
| IC15 | 19.1 | 3.93 | 66.9 | 5.229 | 1.496 | 25.46 |
| IC20 | 51.9 | 5.24 | 79.1 | 1.926 | 1.264 | 19.09 |
| IC25 | 64.2 | 14.5 | 91.5 | 1.557 | 1.092 | 6.886 |
| IC40 | >100 | N/A | N/A | <1 | NA | NA |
| IC50 | >100 | N/A | N/A | <1 | NA | NA |
| | | | | | | |

| Reproduct | ion Summary | | | Calculated Variate | | | | | | | | | |
|-----------|-----------------|-------|------|--------------------|-----|---------|---------|-------|---------|--|--|--|--|
| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect | | | | |
| 0 | Lab Water Contr | 10 | 37.2 | 22 | 46 | 2.73 | 8.63 | 23.2% | 0.0% | | | | |
| 6.25 | | 10 | 31 | 6 | 49 | 4.07 | 12.9 | 41.5% | 16.7% | | | | |
| 12.5 | | 9 | 35.8 | 17 | 43 | 3.06 | 9.18 | 25.6% | 3.82% | | | | |
| 25 | | 9 | 28 | 12 | 42 | 3.6 | 10.8 | 38.5% | 24.7% | | | | |
| 50 | | 10 | 32.1 | 18 | 43 | 2.72 | 8.61 | 26.8% | 13.7% | | | | |
| 100 | | 10 | 22.5 | 17 | 31 | 1.73 | 5.46 | 24.3% | 39.5% | | | | |

Graphics



Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data

| (| Client: Lehigh Permanente | | | | | | | Material: Pond 4A | | | | | | | Test Date: | | | 4-14-15 |
|-------------------|---------------------------|------|---------------------------------------|-----------|------------|---------|--------------|-------------------|----------|---------|----|-----------|-----------------------|--------|------------|----|----|---|
| Proj | ect #: | 240 |)35 | | Test ID: | 6222 | 27 | R | landomi | zation: | 10 |).7. | (5 | | | | | Modified EPAMH |
| | Day | рН | | D.O. | | Cond. | Temp (°C) | | | | | vival / R | | | | | | SIGN-OFF |
| | 0 | 8.14 | Old | New 43 | Old | 315 | 25.1 | A 0 | В | С | D | E | F O | G O | Н | 0 | 0 | Date: 4 14 15 New WQ2 Test Init.: April Sol'n Prep Sol V Time: 1530 |
| | , | | - 6/1 | | <i>d</i> 0 | | 253 | | | 00 | | | $\overline{\bigcirc}$ | | | 0 | 0 | Date: VIS/15 New WQQ Counts: VI |
| | 1 | 7,91 | 7.94 | 8.4 | 8,2 | 322 | | 0 | 0 | | 0 | 0 | | | D | | | Date: 41615 New WQ: 8VV Counts 3VV |
| | 2 | 8.32 | 7.95 | | 7.9 | 318 | 24.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Sol'n Prep: WF Old WQ: 8VV Time: (605) |
| rol | 3 | 8.15 | 8.98 | 8.6 | 8.0 | 319 | 24.8 | 0 | 5 | 5 | 7 | 6 | 0 | 0 | 4 | 0 | 0 | Date |
| r Cont | 4 | 7.96 | 7,99 | 8.2 | 7.3 | 318 | 34.8 | 4 | 0 | 0 | 0 | 17 | 7 | 7 | 0 | 9 | 8 | Date: 445-5 New WQ: FUS Counts: RP Sol'n Prep. ARF Old WQ: The Time / \$30 |
| Lab Water Control | 5 | 80.8 | 7.97 | 8.1 | 7.6 | 316 | 25.2 | 12 | 13 | 14 | 14 | 0 | 15 | 14 | 13 | 16 | 14 | Date: 4/19/15 New WQ: CC Counts SM Sol'n Prep: MF Old WQ: CC Time 1250 |
| L | 6 | | 7.80 | - | 8.2 | | 24.8 | 17 | 21 | 23 | 19 | 23 | 22 | 24 | 21 | 1 | 0 | Date: 4/20/6New WQ: — Counts: CP Sol'n Prep: Old WQ: MA Time 1550 |
| | 7 | | | | | - | | | | | | | | | | | | Date: New WQ: Counts: Sol'in Prep: Old WQ: Time: |
| | 8 | | | | | | | = | | | | | | | | | | Date: Old WQ: Counts Time. |
| 1 | | | | | | | Total= | 33 | 39 | 42 | 40 | 46 | 44 | 45 | 38 | 23 | 22 | Mean Neonates/Female = 37.2 |
| | Day | P | ::::::::::::::::::::::::::::::::::::: | D | .O. | Cond. | | 9,7 | <u> </u> | 10 | | / Repro | | 13 | | | | Sample ID |
| | _ | New | Old | New | Old | (μS/cm) | | Α | В | С | D | Е | F | G | Н | 1 | J | Cample 12 |
| | 0 | 803 | | 8.4 | | 396 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38287 |
| | 1 | 7.86 | 7.94 | 8.2 | 8.1 | 409 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38287 |
| | 2 | 820 | 799 | 8.5 | 8.1 | 401 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 8333 |
| , | 3 | 8.05 | 8.20 | 8.6 | 8,1 | 392 | | 0 | 4 | 0 | 7 | 7 | 8 | 5 | 6 | 0 | 0 | 38333 |
| 6.25% | 4 | 7.93 | 7,47 | 83 | 7.5 | 387 | | 6 | 0 | 7 | 0 | 13 | 0 | 0_ | 0 | 9 | 6 | 38354 |
| 6.2 | 5 | 8.02 | 8.02 | | 7.7 | 390 | | 13 | 12 | 14 | 12 | 0 | 15 | 16 | 14 | 17 | 0 | 38354 |
| | 6 | - | 7.72 | | 8.1 | 429 | | 7 | 18 | 0 | 8 | 25 | 26 | 23 | 12 | 0 | 0 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 26 | 34 | 21 | 27 | 45 | 49 | 44 | 32 | 26 | 6 | Mean Neonates/Female = 31.0 |

Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data

| (| Client: | | Lehigh Permanente | | | | | М | aterial: | | P | ond 4A | | | Test Date: 4-14-15 | | | |
|-------|---------|------|-------------------|------|----------|------------------|--------------|-----|----------|----|-----|------------|----------------|---------|--------------------|----|----|-----------------------------|
| Pro | ject #: | 240 |)35 | | Test ID: | 6222 | 27 | | | | | | | | , | | | Modified EPAMH |
| | Day | pН | | D.O. | | Cond. (µS/cm) | Temp (°C) | | В | | Sur | vival / Re | eproducti F | on G | н | 1 | J | SIGN-OFF |
| | | New | Old | New | Old | , | | A O | В | С | | E | | | н | 1 | | |
| | 0 | 7.95 | | 8.3 | | 469 | | | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 790 | 800 | G.7 | 8.0 | 477 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 8.10 | 8.02 | 8.5 | 8.1 | 473 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 . | 7.99 | 8.20 | 8.7 | 8.0 | 464 | | 0 | Ð | 0 | 0 | 7 | 7 | 6 | 4 | 0 | 0 | |
| 12.5% | 4 | 7.92 | 1 1 | | 6.8 | 455 | | 3 | 5 | 6 | 7 | 0 | O | O | 0 | 7 | 9 | |
| 12. | 5 | 797 | 806 | | | 464 | | 12 | 14 | 14 | 16 | 15 | 0 | 14 | i4 | 14 | 15 | |
| | 6 | - | 7,73 | | _ | | | 0 | 17 | 23 | 20 | 17 | 0 | 22 | 19 | 20 | 0 | |
| | 7 | | | | | | | | | | | | | | · | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 17 | 36 | 43 | 43 | 39 | 7 | 42 | 37 | 41 | 24 | Mean Neonates/Female = 32.4 |
| | Day | | Н | | .0. | Cond. | 1000000 | | | | | / Reprod | | 0 | - 11 | | | - |
| | | New | Old | New | Old | (μS/cm) | | Α | В | С | D | E | F | G | Н | | J | |
| | 0 | 7.87 | | 8.3 | | 599 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | ì | 7.89 | 8.05 | 8.2 | 7.6 | 609 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 8.00 | 8.01 | 8.5 | 8.0 | 605 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 7.91 | 8.23 | 8.7 | 7.6 | 589 | | Ö | 0 | 4 | 0 | 6 | V | 7 | 5 | 0 | 0 | |
| 25% | 4 | 7.88 | 7.57 | 8.5 | 7.9 | 578 | | 4 | 5 | 0 | 0 | 16 | ٥ | 0 | 1 | 6 | 0 | |
| 12. | 5 | | 8.09 | | | 586 | | 13 | 13 | 14 | 13 | 0 | 18 | 14 | ×/0 | 13 | 12 | |
| | 6 | | 7.77 | | 8.4 | vole | | 0 | 0 | 14 | 12 | 20 | 0 | 20 | - | 16 | 0 | |
| | 7 | | | | | | | | | | | | | | - | | | |
| | 8 | | | | | | | | | | | | | | _ | | | |
| | | | | | | | Total= | F1 | 18 | 32 | 31 | 42 | 24 | 41 | X/6 | 35 | 12 | Mean Neonates/Female = 25.8 |

Short-Term Chronic 3-Brood Ceriodaphnia dubia Survival & Reproduction Test Data

| (| Client: | | I | Lehigh Pe | | Material: Pond 4A | | | | | | Test Date: 4-14-15 | | | | | | |
|------|---------|------|----------|-----------|----------|-------------------|--------|----|-----|----|-----|--------------------|----------|-----|----|----|--------|---|
| Proj | ect #: | 240 | 035 | | Test ID: | 6222 | 27 | - | | | | | | | | | Water: | |
| | Day | pН | | D.O. | | Cond. | Temp | | | | Sui | vival / R | eproduct | ion | | | | SIGN-OFF |
| | | New | Old | New | Old | (μS/cm) | (°C) | A | В | С | D | Е | F | G | Н | 1 | J | 300000000000000000000000000000000000000 |
| | 0 | 7.79 | | 8.3 | | 856 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | g | |
| | ı | 7.84 | 8.18 | 8,2 | 7.6 | 870 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 789 | 8.08 | 8.4 | 7,2 | 857 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | | g, 3ત્રે | 8.7 | 7.6 | 834 | | 0 | 0 | .7 | 5 | 5 | 5 | 9 | 6 | 5 | Q | |
| %05 | | | 7.96 | _ | 7.6 | 812 | | 7 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | |
| 50 | 5 | | 8.3 | 8.6 | 7.5 | \$26 | | 12 | 13 | 15 | 13 | 14 | 16 | 15 | 13 | 14 | 12 | |
| | 6 | | 7,90 | | 8.2 | | | 17 | 0 | 16 | 5 | 16 | 22 | 17 | 17 | 15 | ٥ | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 36 | 18 | 38 | 24 | 35 | 43 | 38 | 36 | 34 | 19 | Mean Neonates/Female = 32.1 |
| | Day | р | Н | D | .O. | Cond. | | | . 0 | | | l / Repro | | | | | | |
| | | New | Old | New | Old | (μS/cm) | | Α | В | С | D | Е | F | G | Н | 1 | J | |
| | 0 | 769 | | 6,2 | | 1309 | | 0 | 0 | 0 | Ò | 0 | 0 | 0 | 0 | 9 | 0 | |
| | 1 | 786 | 813 | 8.2 | 7.1 | 1330 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 7.76 | 8.20 | 7.9 | 7.4 | 1309 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 7.6 | 8.39 | 8,7 | 6.6 | 1287 | | บ | 2 | 0 | 3 | 5 | 0 | 5 | 0 | 0 | v | |
| 100% | 4 | | 8.20 | 8.8 | 7-6 | 1233 | | 6 | O | 0 | 0 | 0 | 7 | 0 | S | ی | 5 | |
| 0 0 | 5 | | | | 7.5 | 1269 | | 11 | 13 | 10 | 11 | 12 | 12 | 13 | 12 | 12 | 12 | |
| | 6 | _ | 9.06 | | 1 | 1409 | | 0 | 10 | 16 | 12 | 12 | 0 | 13 | 0 | 0 | 0 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 17 | 25 | 26 | 26 | 29 | 19 | 31 | 17 | 18 | 17 | Mean Neonates/Female = 22.5 |

Appendix C

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Lehigh Pond 13 Site Water to Ceriodaphnia dubia

CETIS Summary Report

Report Date: Test Code: 23 Apr-15 16:33 (p 1 of 2)

62228 | 08-2917-3247

| | | | | | | | | rest Code. | | 02220 0 | 0-2311-32- |
|---|---|------------------|--|---|----------------------|---------|-------|--|--|-------------|------------|
| Ceriodaphnia | Survival and Re | product | ion Test | | | | | | | Paci | fic EcoRis |
| Batch ID: Start Date: Ending Date: Duration: | 01-4991-8293 14 Apr-15 13:50 20 Apr-15 14:30 6d 1h |) P ₁ | est Type: rotocol: pecies: ource: | Reproduction-S EPA-821-R-02- Ceriodaphnia d In-House Cultu | -013 (2002) lubia | | i | Analyst: Diluent: Brine: Age: | Drew Gantner Laboratory Wa Not Applicable 1 | ter | |
| • | 06-9138-8472 13 Apr-15 08:45 13 Jan-15 11:40 29h (3.3°C) | 5 M 5 Se | ode: laterial: ource: tation: | Pond 13 Site Water Lehigh Perman Pond 13 | ente | | | Client: Project: | Lehigh Permar 24035 | nente | |
| Comparison S | Summary | | | | | | | | | | |
| Analysis ID | Endpoint | | NOEL | LOEL | TOEL | PMSD | TU | Meth | nod | | |
| 04-7060-5960 | Reproduction | | 25 | 50 | 35.36 | 31.0% | 4 | Duni | nett Multiple Cor | nparison Te | st |
| 12-0478-7312 | Survival | | 100 | >100 | NA | NA | 1 | Fish | er Exact/Bonferr | oni-Holm Te | est |
| Point Estimat | e Summary | | | | | | | | | | |
| Analysis ID | Endpoint | | Level | % | 95% LCL | 95% UCL | TU | Meth | nod | | |
| 19-0708-9499 | Reproduction | | IC5 | 3.68 | 1.3 | 27.3 | 27.14 | Linea | ar Interpolation (| ICPIN) | |
| | | | IC10 | 14 | 2.59 | 30.6 | 7.124 | | | , | |
| | | | IC15 | 19.1 | 3.89 | 35.1 | 5.237 | , | | | |
| | | | IC20 | 24.2 | 5.18 | 40.2 | 4.14 | | | | |
| | | | IC25 | 29.5 | 11.9 | 48.8 | 3.385 | ; | | | |
| | | | IC40 | 45.9 | 22.7 | N/A | 2.178 | } | | | |
| | | | IC50 | >100 | N/A | N/A | <1 | | | | |
| Reproduction | Summary | | | | | | | | · · · · · · · · · · · · · · · · · · · | | |
| C-% | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std i | Err Std Dev | CV% | %Effec |
| 0 | Lab Water Contr | 10 | 33.6 | 27.7 | 39.5 | 18 | 43 | 2.62 | 8.29 | 24.7% | 0.0% |
| 6.25 | | 10 | 30 | 22.3 | 37.7 | 11 | 44 | 3.41 | 10.8 | 35.9% | 10.7% |
| 12.5 | | 10 | 31.5 | 25.5 | 37.5 | 16 | 40 | 2.63 | 8.33 | 26.4% | 6.25% |
| 25 | | 10 | 26.6 | 19 | 34.2 | 4 | 38 | 3.35 | 10.6 | 39.8% | 20.8% |
| 50 | | 10 | 18 | 9.41 | 26.6 | 4 | 38 | 3.8 | 12 | 66.7% | 46.4% |
| 100 | | 10 | 19.8 | 12.3 | 27.3 | 0 | 34 | 3.32 | 10.5 | 53.0% | 41.1% |
| Survival Sumi | mary | | | | | | | | | | |
| C-% | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std I | Err Std Dev | CV% | %Effec |
| 0 | Lab Water Contr | | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 6.25 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 12.5 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 10 | 0.9 | 0.674 | 1 | 0 | 1 | 0.1 | 0.316 | 35.1% | 10.0% |
| 100 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |



CETIS Summary Report

Report Date: Test Code:

23 Apr-15 16:33 (p 2 of 2)

| • | de. | | • | | _ | 11 | _ | ٠. | -/ |
|---|-----|-----|---|----|-----|----|----|-----|----|
| | 62 | 228 | ī | 08 | 1-2 | 91 | 7. | -32 | 47 |

| | | | | | | | les | t Code: | | 62228 0 | 8-2917-324 |
|------------|----------------------|----------|---------|-------|--------|-------|-------|---------|-------|-----------|------------|
| Ceriodapl | hnia Survival and Re | producti | on Test | | | | | | | Pacif | ic EcoRisk |
| Reproduc | tion Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 22 | 42 | 43 | 41 | 36 | 36 | 33 | 30 | 35 | 18 |
| 6.25 | | 21 | 34 | 22 | 37 | 41 | 44 | 23 | 27 | 40 | 11 |
| 12.5 | | 27 | 19 | 36 | 36 | 38 | 40 | 30 | 37 | 16 | 36 |
| 25 | | 22 | 34 | 38 | 27 | 19 | 30 | 35 | 37 | 4 | 20 |
| 50 | | 19 | 11 | 4 | 5 | 38 | 19 | 12 | 24 | 37 | 11 |
| 100 | | 0 | 10 | 28 | 34 | 25 | 29 | 12 | 21 | 14 | 25 |
| Survival D | Detail | | | | ······ | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12.5 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Survival E | Binomials | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 6.25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 12.5 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 50 | | 1/1 | 1/1 | 0/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 100 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |

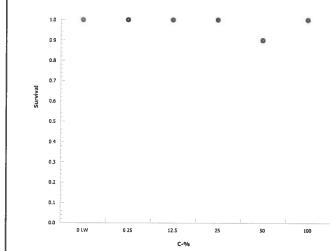
Report Date:

23 Apr-15 16:28 (p 1 of 1)

Test Code:

62228 | 08-2917-3247

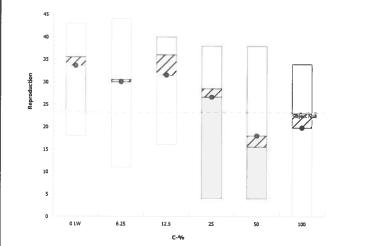
| Cariadanhai | o Suminal and Da | | ention Took | | | | | - | | - | 0 2011 02 |
|--------------|-------------------|----------|--------------|-------------|----------------------------|----------|----------------|--------------|--------|---------|-----------|
| | a Survival and Re | prou | action rest | | | | | | | Paci | fic EcoRi |
| Analysis ID: | 12-0478-7312 | | Endpoint: Su | | | | CETI | S Version: | CETISV | 1.8.7 | |
| Analyzed: | 23 Apr-15 16:20 | <u> </u> | Analysis: ST | P 2x2 Conti | ngen <mark>cy T</mark> abl | es | Offic | ial Results: | Yes | | |
| Data Transfo | rm | Zeta | Alt Hyp | Trials | Seed | | | NOEL | LOEL | TOEL | TU |
| Untransforme | d | | C > T | NA | NA | | | 100 | >100 | NA | 1 |
| Fisher Exact | /Bonferroni-Holm | Test | | | | | | • | | <u></u> | |
| Control | vs C-% | | Test Stat | P-Value | P-Type | Decision | (a:5%) | | | | |
| Lab Water Co | ontrol 6.25 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 12.5 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 25 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 50 | | 0.5 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 100 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| Data Summa | ry | | | | | | | | | | |
| C-% | Control Type | NR | R | NR + R | Prop NR | Prop R | %Effect | | | | |
| 0 | Lab Water Cont | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 6.25 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 12.5 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 25 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 50 | | 9 | 1 | 10 | 0.9 | 0.1 | 10.0% | | | | |
| 100 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |

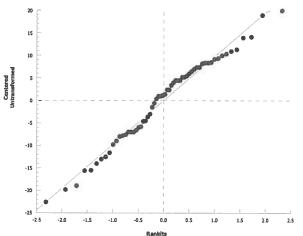


Report Date: Test Code: 23 Apr-15 16:28 (p 1 of 1)

62228 | 08-2917-3247

| | | | | | | | | | | | | , | 8-2917-324 |
|---------------------------|---------|--------------------------|------------|-----------|---------------------------|-------------|-------|---------|-----------|------------|-----------------|-------|-------------|
| Ceriodaphnia | a Surv | ival and Re | eproduct | ion Test | | | | | | | | Paci | fic EcoRisi |
| Analysis ID: Analyzed: | | 7060-5960 Apr-15 16:2 | | | production ametric-Cor | ntrol vs | Treat | tments | | S Version | | .8.7 | |
| Data Transfo | rm | | Zeta | Alt Hyp | Trials | Seed | | | PMSD | NOEL | LOEL | TOEL | TU |
| Untransforme | ed | | NA | C > T | NA | NA | | | 31.0% | 25 | 50 | 35.36 | 4 |
| Dunnett Mult | tiple C | omparison | Test | | | | | | | | | | |
| Control | VS | C-% | | Test Stat | Critical | MSD | DF | P-Value | P-Type | Decision | n(α:5%) | | |
| Lab Water Co | ontrol | 6.25 | | 0.791 | 2.29 | 10.4 | 18 | 0.5128 | CDF | Non-Sign | ificant Effect | | |
| | | 12.5 | | 0.462 | 2.29 | 10.4 | 18 | 0.6626 | CDF | Non-Sign | ificant Effect | | |
| | | 25 | | 1.54 | 2.29 | 10.4 | 18 | 0.2046 | CDF | Non-Sign | nificant Effect | | |
| | | 50* | | 3.43 | 2.29 | 10.4 | 18 | 0.0026 | CDF | Significal | nt Effect | | |
| | | 100* | | 3.03 | 2.29 | 10.4 | 18 | 0.0080 | CDF | Significa | nt Effect | | |
| ANOVA Table | е | | | | | | | | | | | | |
| Source | | Sum Squa | ares | Mean Squ | ıare | DF | | F Stat | P-Value | Decision | ι(α:5%) | | |
| Between | _ | 2047.683 | | 409.5367 | | 5 | | 3.96 | 0.0039 | Significa | nt Effect | | |
| Error | | 5586.9 | | 103.4611 | | 54 | | | | | | | |
| Total | | 7634.583 | | | | 59 | | | | | | | |
| Distributiona | l Tests | 5 | | | | | | | | | | | |
| Attribute | | Test | | | Test Stat | Critica | ai | P-Value | Decision(| (a:1%) | | | |
| Variances | | Bartlett Ed | quality of | Variance | 1.88 | 15.1 | | 0.8658 | Equal Var | iances | | | |
| Distribution | | Shapiro-V | Vilk W No | rmality | 0.978 | 0.946 | | 0.3505 | Normal Di | stribution | | | |
| Reproduction | n Sum | mary | | | | | | | | | | | |
| C-% | Cont | rol Type | Count | Mean | 95% LCL | 95% U | ICL | Median | Min | Max | Std Err | CV% | %Effect |
| 0 | Lab V | Vater Contr | 10 | 33.6 | 27.7 | 39.5 | | 35.5 | 18 | 43 | 2.62 | 24.7% | 0.0% |
| 6.25 | | | 10 | 30 | 22.3 | 37.7 | | 30.5 | 11 | 44 | 3.41 | 35.9% | 10.7% |
| 12.5 | | | 10 | 31.5 | 25.5 | 37.5 | | 36 | 16 | 40 | 2.63 | 26.4% | 6.25% |
| 25 | | | 10 | 26.6 | 19 | 34.2 | | 28.5 | 4 | 38 | 3.35 | 39.8% | 20.8% |
| 50 | | | 10 | 18 | 9.41 | 26.6 | | 15.5 | 4 | 38 | 3.8 | 66.7% | 46.4% |
| 100 | | | 10 | 19.8 | 12.3 | 27.3 | | 23 | 0 | 34 | 3.32 | 53.0% | 41.1% |
| Graphics | | | | | | | | | | | | | |





Report Date: Test Code:

23 Apr-15 16:28 (p 1 of 1)

62228 | 08-2917-3247

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Analysis ID: Analyzed:

19-0708-9499 23 Apr-15 16:27 Endpoint: Reproduction Analysis:

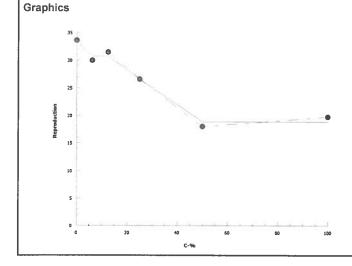
Linear Interpolation (ICPIN)

CETIS Version: Official Results: Yes

CETISv1.8.7

| Lillear | interpola | tion Options | | | | | | |
|---------|-----------|--------------|---------|-------|-----------|------------|-------------------------|--|
| X Trans | sform | Y Transform | Seed | d | Resamples | Exp 95% CL | Method | |
| Linear | | Linear | 1553 | 8894 | 200 | Yes | Two-Point Interpolation | |
| Point E | stimates | | • | | | | | |
| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL | | |
| IC5 | 3.68 | 1.3 | 27.3 | 27.14 | 3.662 | 77.16 | | |
| IC10 | 14 | 2.59 | 30.6 | 7.124 | 3.272 | 38.58 | | |
| IC15 | 19.1 | 3.89 | 35.1 | 5.237 | 2.85 | 25.72 | | |
| IC20 | 24.2 | 5.18 | 40.2 | 4.14 | 2.487 | 19.29 | | |
| IC25 | 29.5 | 11.9 | 48.8 | 3.385 | 2.047 | 8.416 | | |
| IC40 | 45.9 | 22.7 | N/A | 2.178 | NA | 4.396 | | |
| IC50 | >100 | N/A | N/A | <1 | NA | NA | | |

| Reprodu | iction Summary | | | | C | alculated Va | riate | | |
|---------|-----------------|-------|------|-----|-----|--------------|---------|-------|---------|
| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | Lab Water Contr | 10 | 33.6 | 18 | 43 | 2.62 | 8.29 | 24.7% | 0.0% |
| 6.25 | | 10 | 30 | 11 | 44 | 3.41 | 10.8 | 35.9% | 10.7% |
| 12.5 | | 10 | 31.5 | 16 | 40 | 2.63 | 8.33 | 26.4% | 6.25% |
| 25 | | 10 | 26.6 | 4 | 38 | 3.35 | 10.6 | 39.8% | 20.8% |
| 50 | | 10 | 18 | 4 | 38 | 3.8 | 12 | 66.7% | 46.4% |
| 100 | | 10 | 19.8 | 0 | 34 | 3.32 | 10.5 | 53.0% | 41.1% |



| (| Client: | | I | ehigh Pe | ermanent | e | | M | laterial: | | 1 | ond 13 | 3 | | | Te | st Date: | - 4/14/15 |
|-------------------|---------|------|------|----------|----------|---------|--------------|-----|-----------|----------|----|-----------|----------|-----|-----|---------|----------|--|
| Pro | ject #: | 240 |)35 | | Test ID: | 622 | 28 | F | Randomi | zation: | | 19.7 | 51 | | | Control | Water: | Modified EPAMH |
| | Day | pН | | D.O. | | Cond. | Temp (°C) | | | | | | eproduct | | | | | SIGN-OFF |
| | | New | Old | New | Old | (μS/cm) | 1 | A | В | С | D | E | F | G | Н | | j j | Date: 414 5 New WORD Test Init. 143 |
| | 0 | 7.86 | | 8,5 | | 328 | 151 | 0_ | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | Sol'n Prep SV |
| | 1 | 8-01 | 7.96 | 8-1 | 8.3 | 323 | 25.3 | 0 | 0 | 0 | 0 | C | 0 | 0 | 0 | 0 | 0 | Sol'n Prep: Old WO: Time: 1530 |
| | 2 | 8.41 | 8.11 | 8.5 | 8.6 | 322 | 25.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 416/15 New WQ: 3VV Counts: KPC Sol'n Prep: WF Old WQ: SVV Time: 14 C |
| lo lo | 3 | 8.04 | 8.21 | 87 | 8.4 | 316 | 24.9 | 9 | 0 | 8 | Q | 3 | 3 | 0 | 444 | 54 | 0 | Date: 4/17/15 New WQ: Counts: 11WS Sol'n Prep: La Old WQ: Time: 1530 |
| r Cont | 4 | 8.16 | 7,78 | 8.5 | 6.6 | 317 | 24.8 | 8 | 5 | 0 | 6 | 0 | O | 6 | 0 | 0 | 6 | Date: 4-16-15 New WQ: ADMS Counts: CO Sol'n Prep: APC Old WQ: DM Time; 1400 |
| Lab Water Control | 5 | | 8.05 | 5.1 | 7.8 | 317 | 25.0 | -, | 15 | iul | 14 | 15 | 13 | 1D | 14 | 12 | 12 | Date: 4/19/15 New WQ: CC Counts: MPS Sol'n Prep: MF Old WQ: CC Time: 320 |
| La | 6 | | 7.93 | | 8,1 | 342 | 24.8 | | 22 | 23 | 21 | 18 | 20 | 17 | 12 | 19 | 0 | Date: 4/20/15 New WQ: — Counts: CP Sol'n Prep: — Old WQ: WW Time: 1/430 |
| | 7 | | | | | | 2110 | | | | | | | | | • • | | Date: New WQ: Counts: |
| | 8 | | | | | | | | | | | | | | | | | Date: Old WQ: Counts: |
| | | | | | | | Total= | 22 | 42 | 43 | 41 | 36 | 36 | 33 | 30 | 35 | 18 | Mean Neonates/Female = 33.6 |
| | Day | р | H | D | .O. | Cond. | 1000 | 2 4 | 116 | <u> </u> | | l / Repro | | 7 7 | 100 | 4.7 | 1 7 0 | Sample ID |
| | | New | Old | New | Old | (µS/cm) | | Α | В | С | D | Е | F | G | Н | I | J | · |
| | 0 | 781 | | 8,4 | | 398 | | 9 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 38988 |
| | 1 | 798 | 8.06 | 5.1 | 8.2 | 419 | | 0 | 0 | ,0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38788 |
| | 2 | 8.30 | 8.07 | 8.6 | 8.5 | 401 | | 0 | 0 | 0 | 0 | 0 | ಲ | 0 | 0 | 0 | 0 | 38334 |
| | 3 | 8.09 | 8,24 | 8.7 | 8.2 | 393 | | 0 | 0 | 6 | 5 | 0 | 6 | 0 | 4 | 0 | 0 | 38334 |
| 6.25% | 4 | 8.05 | 7.87 | 8.5 | 7.0 | 387 | | 8 | 7 | 0 | 0 | 6 | 0 | 5 | 0 | 8 | 0 | 38355 |
| 6.2 | 5 | 804 | 8.11 | 8.2 | | 399 | | 13 | 13 | Ne | 16 | 14 | 15 | 11 | 12 | 14 | 11 | 38355 |
| | 6 | - | 7.82 | | 4.3 | 431 | | 0 | 14 | Ô | 16 | 21 | 23 | 7 | 11 | 18 | 0 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 21 | 34 | 22 | 37 | 41 | 44 | 23 | 27 | 40 | | Mean Neonates/Female = 30.0 |

| | Client: | | I | ∠ehigh Pe | rmanent | e | | . M | laterial: | | 1 | Pond 13 | 3 | | | Tes | t Date: | 4/14/15 |
|-------|---------|------|------------------------|-----------|----------|---------|--------|---|-----------|-------|-----|---------|----------|----|-----|---------|---------|---|
| Proj | ject #: | 240 |)35 | | Test ID: | 6222 | 28 | | | | | | | | | Control | Water: | Modified EPAMH |
| | Day | рН | | D.O. | | Cond. | Temp | | | | | | eproduct | | | | | SIGN-OFF |
| | | New | Old | New | Old | (µS/cm) | (°C) | Α | В | С | D | Е | F | G | Н | 1 | J | 388888888888888888888888888888888888888 |
| | 0 | 7.85 | | 8,5 | | 469 | | ව | ව | 0 | 0 | Ó | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 8.02 | 8.08 | 8.2 | 8.1 | 473 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 8.23 | 8.09 | 8.6 | 8.3 | 477 | | 0 | Ó | 0 | 0 | 0 | 0 | 0 | 0 | () | 0 | |
| | 3 | 811 | 8,24 | 8:7 | 8.2 | 462 | | 0 | 0 | 3 | 4 | 6 | 5 | 4 | 151 | 0 | 0 | |
| 12.5% | 4 | 8.04 | 7,96 | .2.6 | 7.0 | 450 | | 8 | 7 | 0 | 0 | \ | 0 | 0 | 0 | 6 | 6 | |
| 12.: | 5 | | 8.15 | | 7.9 | 472 | | () | 12 | 12 | 13 | 13 | 13 | 11 | 1j | 10 | 13 | |
| | 6 | | 7.87 | | 8.4 | 515 | | 13 | 0 | 21 | 19 | 18 | 22 | 15 | 21 | 0 | 17 | |
| | 7 | | 70-1 | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | 36 Te | /15 | | | | | | | |
| | | | | | | | Total= | 27 | 19 | 37 | 36 | 38 | 40 | 30 | 37 | 16 | 36 | Mean Neonates/Female = 31.6 |
| | Day | P | <u>на вана на</u> Н | D | .O. | Cond. | | 1 1 | | 101 | | / Repro | | | | | | |
| | | New | Old | New | Old | (µS/cm) | | А | В | С | D | Е | F | G | Н | 1 | J | |
| | 0 | 7.86 | | 8.6 | | 605 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 8-11 | 8-17 | 8.3 | 62 | 606 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 8.16 | 8.11 | 8.7 | 8.4 | 603 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 8.14 | 8-32 | 8.8 | 8.3 | 593 | | 0 | 0 | 5 | 0 | 5 | 0 | 6 | Ð | 3 | 3 | |
| 25% | 4 | 8.04 | 8.03 | 8.6 | 6.8 | 589 | | (0 | 6 | 0 | 1 | 0 | 6 | O | 1 | 0 | 7 | |
| 25 | 5 | 8.11 | 8.24 | 815 | 74 | 597 | | is | iÝ | 15 | 13 | 14 | ઇ | 13 | 12 | 0 | 10 | |
| | 6 | _ | 7.93 | | 8.5 | 624 | | 1 | 14 | 18 | 7 | 0 | 16 | 16 | 18 | } | 0 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | 000000000000000000000000000000000000000 | | | | | | | | | | |
| | | | | | | | Total= | 22 | 34 | 38 | 27 | 19 | 30 | 35 | 37 | 4 | 20 | Mean Neonates/Female = 26.6 |

| C | lient: | | I | ehigh Pe | rmanent | e | | Material: Pond 13 | | | | | | Tes | st Date: | 4/14/1 | 5 | | |
|------|--------|------|--------|----------|----------|------------------|--------|-------------------|----|--------|---------|-----------|-----|-----|----------|---------|--------|---------------------|----------------------|
| Proj | ect#: | 240 | 35 | | Test ID: | 6222 | 28 | - | | | | | | | | Control | Water: | Modifi | ied EPAMH |
| | Day | pН | | D.O. | | Cond. | Temp | | | | | vival / R | | | | | | SIG | GN-OFF |
| | | New | Old | New | Old | (μS/cm) | (°C) | Α | В | С | D | Е | F | G | Н | I | J | *************** | 90000000000000000000 |
| | 0 | 792 | | 8.7 | | 860 | | ව | 0 | 0 | 0 | 0 | 0 | 9 | 9 | 0 | 0 | | |
| | 1 | 8.18 | 8.23 | 8.5 | 8.0 | 862 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | O | 0 | | |
| | 2 | 8.15 | 8.20 | 8.7 | 8.4 | 857 | | ٥ | Ó | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 3 | 8.18 | 8-41 | 9,1 | 81 | 346 | | O | 0 | 0 | 0 | 6 | 0 | 0 | 2 | 0 | 0 | | |
| %05 | 4 | 8.12 | 8-16 | 8.7 | 6.9 | 826 | | 7 | 8 | 1 | 5 | ٥ | 5 | 6 | 0 | 7 | 6 | | |
| 5 | 5 | 8.17 | 8.29 | 8.6 | 7.7 | 839 | | 11 | 10 | 1/3 | 0 | 10 | 14 | 4 | 10 | 13 | 5 | | |
| | 6 | - | g.03 | | 8.0 | 924 | | 1 | 1 | _ | 0 | 22 | 0 | 2 | 12 | 17 | 0 | | |
| | 7 | | | | | | | | | 1 | | | | | | | | | |
| | 8 | | | | | | | | | - | | | | | | | | | |
| | | | | | | | Total= | 14 | 11 | 7/4 | 5 | 38 | 19 | 12 | 24 | 37 | 11 | Mean Neonates/Femal | e = 18.0 |
| | Day | pl | | | .0. | Cond. (µS/cm) | ***** | | | | | l / Repro | | 0 | | | | | |
| | | New | Old | New | Old | (µ3/cm) | | A | В | С | D | Е | F | G | Н | I | J | | |
| | 0 | 8.17 | | 8,9 | | 1306 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 1 | 9.30 | 9.22 | 9-0 | 7.6 | 1367 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 2 | | 8.21 | 8.9 | 7.4 | 1311 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 3 | - | 8.34 | 9.4 | le .8 | 1257 | | 0 | 0 | 2 | 3 | 0 | 0 | 0 | 0 | 3 | 0 | | |
| %001 | 4 | 8.18 | 8.19 | 9.3 | 6.2 | 1248 | | Midilo | 0 | MAINES | O MOLIZ | 2 | 1 | H | 0 | Day II | 2 | | |
| _ | 5 | 8.18 | 8.36 | 9.2 | 6.9 | 1278 | | M | 10 | X | D'S | 10 | 14 | M D | 10 | 13 | 89 | | |
| | 6 | _ | 8-18 | _ | 7.8 | 1376 | | 0 | 0 | 14 | 18 | 13 | 8 | 8 | 11 | 0 | 14 | | |
| | 7 | | | | | | | | | _ | | | | | | | | | |
| | 8 | | ****** | | | | | | 13 | | 1 | 0.5 | 0.0 | 10 | | | 0.5 | | |
| | | | | | | | Total= | 0 | 10 | * | 34 | 25 | 29 | 12 | 21 | 14 | 25 | Mean Neonates/Femal | e = 18.8 aps |

18 18 18 13 1.24-15 19.8 4B 415

Appendix D

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Lehigh Pond 14 Site Water to *Ceriodaphnia dubia*: Analysis Excludes Outlier Data

CETIS Summary Report

Report Date: 23 Apr-15 17:44 (p 1 of 2) Test Code: 62229 | 12-3850-9715

| | | | | | | | | est Code: | | 02229 1 | 2-3850-971 |
|---|--|--------------|--------------------------------------|---|----------------------|---------|--------|--|--|-----------|-------------|
| Ceriodaphnia | Survival and Re | productio | n Test | | | | | | | Paci | fic EcoRisk |
| Batch ID: Start Date: Ending Date: Duration: | 11-7471-8046 14 Apr-15 13:40 20 Apr-15 16:30 6d 3h | Pro | t Type: tocol: ecies: irce: | Reproduction-S EPA-821-R-02- Ceriodaphnia d In-House Cultu | -013 (2002) Iubia | | C E | Analyst: Diluent: Brine: Age: | Drew Gantner Laboratory Wa Not Applicable 1 | ter | |
| • | 00-1195-9236 13 Apr-15 08:02 13 Apr-15 11:40 30h (3.4 °C) | Sou | ie: erial: irce: tion: | Pond 14 Site Water Lehigh Perman Pond 14 | ente | | | Client: Project: | Lehigh Perman 23483 | nente | |
| Batch Note: | Statistics Exludi | ing outliers | | | | | | | | | |
| Comparison S | Summary | | | | | | | | | | |
| Analysis ID | Endpoint | | NOEL | LOEL | TOEL | PMSD | TU | Meth | od | | |
| 00-5846-5034 | Reproduction | | 50 | 100 | 70.71 | 22.9% | 2 | | xon/Bonferroni | Adi Test | |
| 18-2519-9861 | Survival | | 100 | >100 | NA | NA | 1 | | er Exact/Bonferro | - | est |
| Point Estimate | e Summary | | | | | | | | | • | · |
| Analysis ID | Endpoint | | Level | % | 95% LCL | 95% UCL | TU | Meth | od | | |
| 05-5594-2683 | Reproduction | | IC5 | 5.86 | 2.56 | 42.4 | 17.07 | | r Interpolation (| ICPIN) | |
| | | | IC10 | 34.1 | 5.12 | 57.1 | 2.931 | | , , | , | |
| | | | IC15 | 43.9 | 30.2 | 67.8 | 2.279 | | | | |
| | | | IC20 | 54.5 | 37.2 | 95.5 | 1.833 | | | | |
| | | | IC25 | 66.7 | 42.5 | N/A | 1.499 | | | | 10 |
| | | | IC40 | >100 | N/A | N/A | <1 | | | | |
| | | | IC50 | >100 | N/A | N/A | <1 | | | | |
| Reproduction | Summary | | | | | | | ······································ | | | |
| | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | %Effect |
| 0 | Lab Water Contr | 8 | 37.5 | 34.9 | 40.1 | 31 | 41 | 1.1 | 3.12 | 8.31% | 0.0% |
| 6.25 | | 9 | 35 | 30.2 | 39.8 | 24 | 44 | 2.1 | 6.3 | 18.0% | 6.67% |
| 12.5 | | 10 | 33.7 | 28.6 | 38.8 | 17 | 41 | 2.25 | 7.12 | 21.1% | 10.1% |
| 25 | | 10 | 37.8 | 35.3 | 40.3 | 32 | 42 | 1.12 | 3.55 | 9.4% | -0.8% |
| 50 | | 10 | 30.7 | 24.8 | 36.6 | 13 | 43 | 2.6 | 8.21 | 26.7% | 18.1% |
| 100 | | 10 | 23 | 14.3 | 31.7 | 0 | 35 | 3.85 | 12.2 | 52.9% | 38.7% |
| Survival Sumr | nary | | | | | | | | | | |
| | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | %Effect |
| 0 | Lab Water Contr | 9 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 6.25 | | 10 | 0.9 | 0.674 | 1 | 0 | 1 | 0.1 | 0.316 | 35.1% | 10.0% |
| 12.5 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 100 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| | | . • | | • | • | 1 | | U | U | 0.070 | 0.070 |



CETIS Summary Report

Report Date: Test Code: 23 Apr-15 17:44 (p 2 of 2) 62229 | 12-3850-9715

| | | | | | | | | t oode. | | | 2-0000-31 |
|------------|----------------------|----------|---------|-------|-------|-------|-------|---------|-------|-------|-----------|
| Ceriodap | hnia Survival and Re | producti | on Test | | | | | | | Paci | ic EcoRis |
| Reproduc | ction Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | | 41 | 39 | 31 | 38 | 39 | 38 | 35 | 39 | |
| 6.25 | | 30 | 44 | 40 | 39 | 24 | 38 | 31 | | 38 | 31 |
| 12.5 | | 28 | 36 | 41 | 33 | 41 | 37 | 38 | 34 | 32 | 17 |
| 25 | | 42 | 38 | 36 | 32 | 42 | 40 | 38 | 33 | 36 | 41 |
| 50 | | 26 | 38 | 26 | 36 | 43 | 30 | 32 | 34 | 13 | 29 |
| 100 | | 24 | 32 | 0 | 20 | 33 | 32 | 35 | 28 | 22 | 4 |
| Survival [| Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | <u>-</u> |
| 6.25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 12.5 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Survival E | Binomials | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | |
| 6.25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 0/1 | 1/1 | 1/1 |
| 12.5 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 50 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 100 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |

Test Code:

Report Date: 23 Apr-15 17:44 (p 1 of 1)

| | | | | | | | Test | Code: | | 62229 1 | 2-3850-971 |
|--------------------------------|----------------------------------|-------|-------------------------------|---------|-------------|----------|----------------|---------------------------|---------------|-----------|-------------|
| Ceriodaphr | nia Survival and Re | produ | ection Test | | | | • | | | Paci | ic EcoRisk |
| Analysis ID Analyzed: | : 18-2519-9861 23 Apr-15 17:4 | 4 | Endpoint: Sur Analysis: ST | | ngency Tabl | es | | S Version: al Results: | CETISv Yes | 1.8.7 | |
| Data Transi | form | Zeta | Alt Hyp | Trials | Seed | | | NOEL | LOEL | TOEL | TU |
| Untransform | ed | | C > T | NA | NA | | | 100 | >100 | NA | 1 |
| Fisher Exac | t/Bonferroni-Holm | Test | | | | | | | | | |
| Control | vs C-% | | Test Stat | P-Value | P-Type | Decision | (α:5%) | | | | |
| Lab Water C | Control 6.25 | | 0.526 | 1.0000 | Exact | | ificant Effect | | | | |
| | 12.5 | | 1 | 1.0000 | Exact | _ | ificant Effect | | | | |
| | 25 | | 1 | 1.0000 | Exact | | ificant Effect | | | | |
| | 50 | | 1 | 1.0000 | Exact | | ificant Effect | | | | |
| | 100 | | 1 | 1.0000 | Exact | _ | ificant Effect | | | | |
| Data Summ | ary | | | | | | | | | | |
| C-% | Control Type | NR | R | NR + R | Prop NR | Prop R | %Effect | | | | |
| 0 | Lab Water Cont | 9 | 0 | 9 | 1 | 0 | 0.0% | | | | |
| 6.25 | | 9 | 1 | 10 | 0.9 | 0.1 | 10.0% | | | | |
| 12.5 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 25 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 50 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 100 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| Graphics | | | | | | | | | | | |
| 0.9 0.8 0.7 18 0.7 | • | • | • • | • | | | | | | | |

0.4 0.3 0.2 0,1

0 LW

6.25

12.5

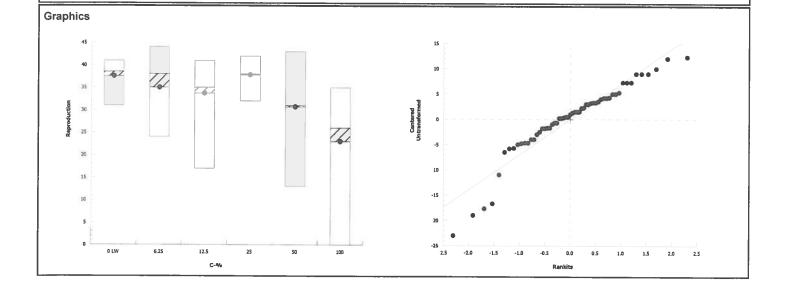
C-%

100

Report Date: Test Code: 23 Apr-15 17:44 (p 1 of 1)

62229 | 12-3850-9715

| Ceriodaphn | ia Survival and R | eproduc | tion Test | | | | | | | | Paci | fic EcoRis |
|---------------------------|--------------------------------|-----------|------------|---------------------------|-----------|-----|----------|---------------------------------------|---------------|---------------|-------|------------|
| Analysis ID: Analyzed: | 00-5846-5034 23 Apr-15 17:4 | | • | production nparametric | -Multiple | Cor | mparison | | IS Version | | 1.8.7 | |
| Data Transfe | orm | Zeta | Alt Hyp | Trials | Seed | | | PMSD | NOEL | LOEL | TOEL | TU |
| Untransforme | ed | NA | C > T | NA | NA | | | 22.9% | 50 | 100 ' | 70.71 | 2 |
| Wilcoxon/Bo | onferroni Adj Tes | t | | | | | | | | | | |
| Control | vs C-% | | Test Stat | Critical | Ties | DF | P-Value | P-Type | Decision | ι(α:5%) | | |
| Lab Water C | ontrol 6.25 | | 72.5 | NA | 3 | 15 | 1.0000 | Exact | Non-Sign | ificant Effec | t | |
| | 12.5 | | 80 | NA | 2 | 16 | 0.5013 | Exact | Non-Sign | ificant Effec | t | |
| | 25 | | 97.5 | NA | 2 | 16 | 1.0000 | Exact | Non-Sign | ificant Effec | t | |
| | 50 | | 70 | NA | 1 | 16 | 0.0624 | Exact | Non-Sign | ificant Effec | t | |
| | 100* | | 59.5 | NA | 1 | 16 | 0.0014 | Exact | Significar | | | |
| ANOVA Tabl | е | | | | | | | | | | _ | |
| Source | Sum Squ | ares | Mean Sq | uare | DF | | F Stat | P-Value | Decision | (a:5%) | | |
| Between | 1482.761 | | 296.5523 | | 5 | | 5.23 | 0.0006 | Significar | nt Effect | | |
| Error | 2893.8 | | 56.74118 | | 51 | | | | | | | |
| Total | 4376.562 | | | | 56 | | | | | | | |
| Distribution | al Tests | | | | | | | · · · · · · · · · · · · · · · · · · · | | | | |
| Attribute | Test | | | Test Stat | Critica | ıl | P-Value | Decision(| α:1%) | | | |
| Variances | Bartlett E | quality o | f Variance | 18.7 | 15.1 | | 0.0022 | Unequal \ | | | | |
| Distribution | Shapiro-V | Vilk W N | lormality | 0.916 | 0.943 | | 0.0007 | Non-norm | al Distributi | on | | |
| Reproductio | n Summary | | | | | | | | | | | |
| C-% | Control Type | Count | Mean | 95% LCL | 95% U | CL | Median | Min | Max | Std Err | CV% | %Effect |
| 0 | Lab Water Cont | r 8 | 37.5 | 34.9 | 40.1 | | 38.5 | 31 | 41 | 1.1 | 8.31% | 0.0% |
| 6.25 | | 9 | 35 | 30.2 | 39.8 | | 38 | 24 | 44 | 2.1 | 18.0% | 6.67% |
| 40.5 | | | | | | | | | | | | |



38.8

40.3

36.6

31.7

35

38

31

26

17

32

13

0

41

42

43

35

2.25

1.12

2.6

3.85

21.1%

9.4%

26.7%

52.9%

10.1%

-0.8%

18.1%

38.7%

33.7

37.8

30.7

23

28.6

35.3

24.8

14.3

10

10

10

10

12.5

25

50

100

Report Date: Test Code:

23 Apr-15 17:44 (p 1 of 1)

62229 | 12-3850-9715

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Analysis ID: Analyzed:

05-5594-2683 23 Apr-15 17:44 Endpoint: Reproduction Analysis:

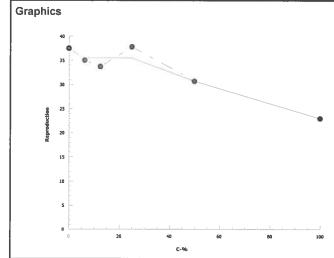
Linear Interpolation (ICPIN)

CETIS Version: CETISv1.8.7

| Official | Results: | Yes |
|----------|----------|-----|
|----------|----------|-----|

| Linear | inear Interpolation Options | | | | | | | | | | | |
|---------|-----------------------------|-------------|---------|-------|-----------|------------|-------------------------|--|--|--|--|--|
| X Trans | sform | Y Transform | Seed | d | Resamples | Exp 95% CL | Method | | | | | |
| Linear | | Linear | 2594 | 23 | 200 | Yes | Two-Point Interpolation | | | | | |
| Point E | stimates | | | | | | | | | | | |
| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL | | | | | | |
| IC5 | 5.86 | 2.56 | 42.4 | 17.07 | 2.357 | 39.09 | | | | | | |
| IC10 | 34.1 | 5.12 | 57.1 | 2.931 | 1.752 | 19.54 | | | | | | |
| IC15 | 43.9 | 30.2 | 67.8 | 2.279 | 1.475 | 3.316 | | | | | | |
| IC20 | 54.5 | 37.2 | 95.5 | 1.833 | 1.048 | 2.685 | | | | | | |
| IC25 | 66.7 | 42.5 | N/A | 1.499 | NA | 2.355 | | | | | | |
| IC40 | >100 | N/A | N/A | <1 | NA | NA | | | | | | |
| IC50 | >100 | N/A | N/A | <1 | NA | NA | | | | | | |

| Reprodu | ction Summary | | | | C | Calculated Va | riate | | | |
|---------|---------------------|-------|------|-----|-----|---------------|---------|-------|---------|--|
| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect | |
| 0 | Lab Water Contr | 8 | 37.5 | 31 | 41 | 1.1 | 3.12 | 8.31% | 0.0% | |
| 6.25 | | 9 | 35 | 24 | 44 | 2.1 | 6.3 | 18.0% | 6.67% | |
| 12.5 | | 10 | 33.7 | 17 | 41 | 2.25 | 7.12 | 21.1% | 10.1% | |
| 25 | | 10 | 37.8 | 32 | 42 | 1.12 | 3.55 | 9.4% | -0.8% | |
| 50 | | 10 | 30.7 | 13 | 43 | 2.6 | 8.21 | 26.7% | 18.1% | |
| 100 | | 10 | 23 | 0 | 35 | 3.85 | 12.2 | 52.9% | 38.7% | |



| (| Client: | | Lehigh Permanente | | | | | М | aterial: | | I | ond 14 | , | | | Tes | t Date: | 4/14/15 |
|-------------------|---------|------|-------------------|-------------------|----------|------------------|--------------|------|----------|---------|--------------|------------|---------------|----------|---------------|---------|---------|--|
| Pro | ect #: | 240 | 035 | _ | Test ID: | 622 | 29 | R | andomi | zation: | | 10.6 | .11 | | | Control | Water: | Modified EPAMH |
| | Day | pН | | D.O. | | Cond. (µS/cm) | Temp (°C) | | - D | | | vival / R | eproduct F | ion G | Н | I | J | SIGN-OFF |
| | 0 | New | Old | 8.9 | Old | 319 | 25.1 | A () | В | C | D | 0 | 0 | 0 | 0 | 0 | 0 | DateMI4II5 New WQ: Test Init 577 Sol'n PrepSyl ARE Time 1340 |
| | | 7.41 | ~d | | d 1 | | | | | | | | | | | | - | Date LISTO New WOOD Counts ALS |
| | 1 | 7.99 | 6.08 | 8.4 SVY 411WIS | 8.2 | 327 | 25.3 | 0 | Ö | 0 | 0 | 0 | - C | RO | 0 | 0 | 0 | Sol'n Prep: Old WQ: Time 430 |
| | 2 | 8.13 | 8,09 | 7.8.3 | 0 1 | 320 | 248 | 0 | 0 | 0 | 0 | 0 | - | 0 | \mathcal{O} | 0 | 6 | Sol'n Prep: MF Old WQ: 2 Time 1415 Date: 4/17/15 New WQ: SF Counts APF |
| lori | 3 | 8.16 | 8-17 | 8.6 | 8.0 | 313 | 25.1 | 0 | ð | 0 | 0 | 0 | _ | 3 | 0 | 0 | 0 | Sol'n Prep: 1 Old WQ: 3 Time: 509 |
| er Cont | 4 | 8.01 | 8.63 | 8.3 | 6.8 | 321 | 24.8 | 6 | a | 6 | 6 | 8 | ` | 0 | 7 | G | 6 | Date: 4-18-15 New WQ: MJM Counts Time 1530 |
| Lab Water Control | 5 | 794 | 8.00 | 8.5 | 78 | 320 | 25.0 | 13 | 14 | 13 | 11 | 14 | • | 15 | 12 | 13 | 14 | Date: 4/19/15 New WQ: CC Counts MA Sol'n Prep: MF Old WQ: CC Time SOC |
| تا | 6 | _ | 8.18 | _ | 8.0 | 356 | 24.8 | 0 | 18 | 70 | 14 | W | - | 21 | 19 | 16 | 19 | Date U 70 I New WQ: Counts MA Sol'n Prep. Old WQ: Time U30 |
| | 7 | | | | | | | | | | | | - | | | | | Date: New WQ: Counts: Sol'n Prep: Old WQ: Time |
| | 8 | | | | | | | | | | | | ب | | | | | Date: Old WQ: Counts Time: |
| | | | | | | | Total= | 19 | 41 | 39 | 31 | 38 | _ | 39 | 38 | 35 | 39 | Mean Neonates/Female = 31.94/23 55.4 |
| | Day | New | Old | New | Old | Cond. (µS/cm) | | A | В | С | Surviva D | l / Reprod | duction F | G | Н | 1 | J | Sample ID |
| | 0 | 7.75 | | 8.6 | | 399 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38289 |
| | ı | 7.96 | 8,06 | 8.7. | 8,3 | 401 | | 0 | 0 | 0 | 0 | Ø | 0 | 0 | Ð | 0 | O | 38289 |
| | 2 | 8.06 | | | 9.2 | 404 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 38335 |
| | 3 | ADD. | 8.21 | 9.7 | 8,2 | 395 | | 0 | 0 | 0 | 0 | 0 | 5 | 0 | ×/0 | 0 | 0 | 38335 |
| 6.25% | 4 | 7,96 | 8.06 | 8.3 | 7.4 | 396 | | 3 | 7 | 6 | 7 | გ | 0 | 0 | _ | S | 3 | 38356 |
| 6.2 | 5 | 793 | 8.05 | 8.2 | 7.7 | 408 | | 13 | 18 | 13 | 14 | 15 | 13 | 13 | _ | 14 | 11 | 38356 |
| | 6 | - | 8.06 | - | 7.9 | 459 | | 14 | 19 | 21 | 18 | I | 20 | 18 | | 19 | 17 | _ |
| 5 | 7 | | | | | | | | | | | | | | - | | | |
| i | 8 | | | | | | | | | | 39 4/21/ | 5 | | | - | | | |
| | | | | | | | Total= | 30 | 44 | 40 | 36 | 24 | 38 | 31 | 1/0 | 38 | 21 | Mean Neonates/Female 31.5 |

* replicate not loaded - exchele from Statistical analysis.

| | lient: | | I | ehigh Pe | rmanento | е | | М | aterial: | | I | Pond 14 | | | | Tes | t Date: | 4/14/15 |
|-------|--------|---|-------|-------------|----------|------------------|--------------|------|----------|---------------------------------------|-----|-----------|---------------|----------|--------------|---------|---------|--|
| Proj | ect#: | 240 |)35 | | Test ID: | 6222 | 29 | - | | | | | | | | Control | Water: | Modified EPAMH |
| | Day | pН | Old | D.O. New | Old | Cond. (µS/cm) | Temp (°C) | A | В | сТ | Sur | vival / R | eproduct F | ion G | Н | I | J | SIGN-OFF |
| | 0 | New | Old | | Old | | | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 | |
| | | 7.80 | | 8.6 | | 476 | | | | | | 0 | | | | | | |
| | 1 | 797 | 8.10 | | , , | 476 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 8.04 | 916 | 8.6 | 8.4 | 477 | | ව | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 8.07 | 8.22 | 8.7 | 8,3 | 470 | | 0 | 0 | O | 0 | 0 | 4 | Û | 4 | 0 | 0 | |
| 12,5% | 4 | 7,90 | 8,14 | 8,3 | 6.2 | 473 | | 0 | 7 | 4 | 5 | 6 | 0 | 0 | 0 | 5 | 8 | |
| 12 | 5 | 792 | 8.13 | | 7.9 | 476 | | 8 | 16 | 15 | 11 | 17 | 14 | 11 | -11 | 12 | 9 | |
| | 6 | | 8.10 | | 7.9 | 546 | | 20 | 13 | 22 | 17 | 18 | 19 | 21 | 19 | 15 | 0 | |
| | 7 | | 0.10 | | 111 | 0.0 | | | 12 | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 28 | 36 | ul | 23 | 41 | 31 | 38 | 34 | 37 | 17 | Mean Neonates/Female = 33.7 |
| | Day | r | Н | D | .O. | Cond. | | 100 | | | | l / Repro | duction | | | | | |
| | | New | Old | New | Old | (μS/cm) | | А | В | С | D | Е | F | G | Н | I | J | |
| i | 0 | 7.86 | | 8.0 | | 609 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 8,00 | 8-17 | 8.3 | 84 | (0001 | | 0 | Ω | O | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 7.99 | 9.23 | 8.6 | 22 | 613 | | 0 | 0 | 0 | 0 | 0 | ව | 0 | 0 | 0 | 0 | |
| | 3 | 8.05 | | 8.8 | 8,2 | 601 | | 0 | 0 | 4 | 0 | 4 | 7 | 6 | 0 | 0 | 5 | |
| | 4 | 7,92 | | 1 | 7.0 | 592 | | 8 | 7 | 0 | 6 | 1 | 0 | 0 | 5 | 5 | 0 | |
| 25% | 5 | ' | 8.18 | | | 610 | | 14 | 12 | 14 | 13 | 10 | 13 | 14 | 13 | 15 | ile | |
| = | 6 | 1.65 | 8.16 | - | 7.9 | | | w | 19 | 18 | 13 | 21 | 20 | 18 | 15 | 160 | 20 | |
| | 7 | - | 12,14 | | 1 -1 -1 | 1 W S W | | | , , | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | | , | | ,,, | | 100 | | |
| | - | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | Total= | u1 | 38 | 36 | 27 | u7 | 40 | 29 | 33 | 310 | 41 | Mean Neonates/Female = 37-8 |
| | | | | | | | I VIAI- | 1-16 | 100 | 170 | 1 U | 1-1 | 1000 | 100 | <u>ر ر ا</u> | Ψ | 1-11 | International Control of the Control |

| C | lient: | | Lehigh Permanente 24035 Test ID: 62229 | | | | | | aterial: _ | | P | ond 14 | | | | | | 4/14/15 |
|---------|--------|------|---|---------|----------|------------------|--------------|------|------------|------|-----|-----------------|---------------|---------|-----|---------|----------|-----------------------------|
| Proj | ect#: | 240 |)35 | | Test ID: | 6222 | 29 | | | | | | | | | Control | Water: | Modified EPAMH |
| | Day | рН | | D.O. | | Cond. (µS/cm) | Temp (°C) | | В | С | Sur | vival / Re | producti F | on G | Н | 1 | J | SIGN-OFF |
| | | New | Old | New | Old | | | A | | | | | | 0 | 0 | 0 | 0 | |
| | 0 | 7.87 | | 8,9 | | 867 | | 0 | 0 | 0 | 0 | 0 | 0 | | | | | |
| | 1 | 8.03 | 8.29 | 8.4 | 8.1 | 855 | | 0 | 0 | D | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 7.97 | 8.32 | 8.6 | 8.1 | 871 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 8.05 | 8,42 | 9.1 | 8.2 | 854 | | 0 | 0 | 0 | 0 | 7 | 0 | ٥ | 4 | 0 | 0 | |
| , | 4 | - VI | 835 | 8.2 | 6. | 859 | | 4 | N. Sc. | 5 | 137 | 0 | 5 | 6 | 0 | 6 | 10 | |
| \$0% | 5 | ı | | 8.5 | | | | io | 15 | u | 14 | 17 | 10 | 14 | iU | 7 | 13 | |
| | | 1.02 | 8.29 | | | 868 848 | | ilo | 15 | 1- | 15 | 19 | 15 | 12 | 16 | 0 | 6 | |
| į | 6 | | 8-26 8-19 8-19 9-19 | | 7.8 | 6973 | | 10 | () | 1 1 | 13 | 1 1 | 13 | 16 | 10 | | <u> </u> | |
| | 7 | 3668 | | ******* | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | 21.0 | 01 | 10 | 20 | 20 | 71) | 10 | 00 | 76.7 |
| 00000 | | | | | | | Total= | 12le | 38 | 20 | | 43 1 / Repro | | 32 | 34 | 13 | 121 | Mean Neonates/Female = 30.7 |
| | Day | New | Old | New | .O. Old | Cond. (µS/cm) | | А | В | С | D | Е | F | G | Н | 1 | J | |
| 3883888 | 0 | 7.92 | | 9.2 | | 1341 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 8,04 | | 8,5 | 8.1 | 1350 | | v | 0 | 0 | 0 | O | - 0 | Q | O | 0 | O | |
| | 2 | 1 | 8.28 | 8.4 | 8-1 | 1334 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 7.99 | | 1 | 8.2 | 1309 | REGREE | D | 0 | 0 | 0 | 0 | 5 | 6 | 3 | 0 | 4 | |
| % | 4 | | 8,23 | 8.6 | 7,0 | 1305 | | 6 | 4 | 0 | S | 0 | 0 | 6 | I | 0 | 0 | |
| 100% | 5 | | 8/18 | 8:7 | 6.5 | 1338 | | 10 | 11 | 0 | 0 | 12 | 12 | 15 | 8 | 16 | 0 | |
| | 6 | | 8.18 | - | 78 | 1383 | | 8 | 17 | 0 | 14 | 21 | 15 | 14 | 16 | 12 | 0 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | | | | | | | | | | | | | | | |
| | | | | | | | Total | 2 | 32 | 0 | 70 | 33 | 32 | 35 | 28 | 22 | 4 | Mean Neonates/Female = 23.0 |

Appendix E

Summary of Statistics for the Evaluation of the Chronic Toxicity of Lehigh Pond 14 Site Water to *Ceriodaphnia dubia*: Analysis Includes Outlier Data

CETIS Summary Report

Report Date: Test Code: 23 Apr-15 17:36 (p 1 of 2)

62229 | 12-3850-9715

| Ceriodaphnia | Survival and Re | producti | ion Test | | | | | | | | Pacif | ic EcoRisk |
|---|--|---------------------------------|--|---|--|---------------------------|----------------------------------|---|----------------|--|---|--|
| Batch ID: Start Date: Ending Date: Duration: | 11-7471-8046 14 Apr-15 13:40 20 Apr-15 16:30 6d 3h | Pr Sp | est Type: rotocol: pecies: purce: | Reproduction-S EPA-821-R-02- Ceriodaphnia d In-House Cultu | ·013 (2002) ubia | | 1 | Analyst: Diluent: Brine: Age: | Labor | Gantner atory Wat pplicable | er | |
| | 00-1195-9236 13 Apr-15 08:02 13 Apr-15 11:40 30h (3.4 °C) | 2 Ma | ode: aterial: ource: ation: | Pond 14 Site Water Lehigh Perman Pond 14 | ente | | | Client: Project: | Lehig 23483 | h Permano | ente | |
| Batch Note: | Statistics includ | ing outlie | rs | | | | | | | | | |
| Comparison S | Summary | | | | | | | | | | | |
| Analysis ID 03-7466-8809 04-9891-8550 | Endpoint Reproduction Survival | | 50 100 | 100 >100 | 70.71 NA | 28.0% NA | TU 2 1 | | oxon/B | onferroni A | Adj Test ni-Holm Te | st |
| Point Estimate | Summary | | | | | | | | | | <u></u> | |
| Analysis ID | Endpoint | | Level | % | 95% LCL | 95% UCL | TU | Meth | nod | | | |
| 19-8032-7448 | Reproduction | | IC5 IC10 IC15 IC20 | 29.5 41.7 53.7 65.2 | 2.14 4.29 26.2 37.7 | 56 66.8 N/A N/A | 3.384 2.396 1.862 1.533 | | ar Inter | polation (I | CPIN) | |
| | | | IC25 IC40 IC50 | 76.7 >100 >100 | 43.3 N/A N/A | N/A N/A N/A | 1.303 <1 <1 | | | | | |
| Reproduction | Summary | | | | | | | | | | | |
| C-% | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std I | Err | Std Dev | CV% | %Effect |
| 0 6.25 12.5 25 50 100 | Lab Water Contr | 9 10 10 10 10 10 | 35.4 31.5 33.7 37.8 30.7 23 | 30.2 22.5 28.6 35.3 24.8 14.3 | 40.7 40.5 38.8 40.3 36.6 31.7 | 19 0 17 32 13 | 41 44 41 42 43 35 | 2.27 3.97 2.25 1.12 2.6 3.85 | | 6.82 12.6 7.12 3.55 8.21 12.2 | 19.2% 39.9% 21.1% 9.4% 26.7% 52.9% | 0.0% 11.1% 4.92% -6.65% 13.4% 35.1% |
| Survival Sumn | nary | | | | | | | | | | | |
| 0 I 6.25 12.5 | Control Type Lab Water Contr | 10 10 | Mean 1 0.9 1 | 95% LCL 1 0.674 1 | 95% UCL 1 1 | Min 1 0 1 | 1 1 1 | Std I 0 0.1 0 | | Std Dev 0 0.316 | CV% 0.0% 35.1% 0.0% | %Effect 0.0% 10.0% 0.0% |
| 25 50 100 | | 10 10 10 | 1 1 1 | 1 1 1 | 1 1 1 | 1 1 1 | 1 1 1 | 0 0 0 | | 0 0 0 | 0.0% 0.0% 0.0% | 0.0% 0.0% 0.0% |



CETIS Summary Report

Report Date: Test Code: 23 Apr-15 17:36 (p 2 of 2)

62229 | 12-3850-9715

| | | | | | | | 163 | t Code: | | 02229 1 | 2-3650-971 |
|------------|----------------------|----------|---------|-------|-------|-------|-------|---------|---|-----------|---------------|
| Ceriodap | hnia Survival and Re | producti | on Test | | | | | | | Pacif | ic EcoRisk |
| Reproduc | ction Detail | | | | | | | | , | | ····· |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 19 | 41 | 39 | 31 | 38 | 39 | 38 | 35 | 39 | <u> </u> |
| 6.25 | | 30 | 44 | 40 | 39 | 24 | 38 | 31 | 0 | 38 | 31 |
| 12.5 | | 28 | 36 | 41 | 33 | 41 | 37 | 38 | 34 | 32 | 17 |
| 25 | | 42 | 38 | 36 | 32 | 42 | 40 | 38 | 33 | 36 | 41 |
| 50 | | 26 | 38 | 26 | 36 | 43 | 30 | 32 | 34 | 13 | 29 |
| 100 | | 24 | 32 | 0 | 20 | 33 | 32 | 35 | 28 | 22 | 4 |
| Survival [| Detail | | | | | | | | | | _ |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | |
| 6.25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 |
| 12.5 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Survival E | Binomials | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | ···· |
| 6.25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 0/1 | 1/1 | 1/1 |
| 12.5 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 50 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 100 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |

Report Date: Test Code: 23 Apr-15 17:38 (p 1 of 1)

62229 | 12-3850-9715

| | | | | | | | Test | Code: | | 62229 1 | 2-3850-971 |
|------------------|--------------------------------|------|-------------------------------|---------|-------------|----------|----------------|---------------------------|---------------|-----------|-------------|
| Ceriodaphnia S | urvival and Re | prod | uction Test | | | | | | | Pacif | fic EcoRisi |
| • |)4-9891-8550 23 Apr-15 17:3 | 5 | Endpoint: Sur Analysis: ST | | ngency Tabl | es | | S Version: al Results: | CETIS\ Yes | 1.8.7 | |
| Data Transform | | Zeta | Alt Hyp | Trials | Seed | | | NOEL | LOEL | TOEL | TU |
| Untransformed | | | C > T | NA | NA | | | 100 | >100 | NA | 1 |
| Fisher Exact/Bo | nferroni-Holm | Test | | | | | | | | | |
| Control vs | s C-% | | Test Stat | P-Value | P-Type | Decision | (a:5%) | | | | |
| Lab Water Contro | ol 6.25 | | 0.526 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 12.5 | | 1 | 1.0000 | Exact | _ | ificant Effect | | | | |
| | 25 | | 1 | 1.0000 | Exact | _ | ificant Effect | | | | |
| | 50 | | 1 | 1.0000 | Exact | _ | ificant Effect | | | | |
| | 100 | | 1 | 1.0000 | Exact | _ | ificant Effect | | | | |
| Data Summary | | | | | | | | | | | |
| | ontrol Type | NR | R | NR + R | Prop NR | Prop R | %Effect | | | | |
| 0 La | ab Water Cont | 9 | 0 | 9 | 1 | 0 | 0.0% | | | | |
| 6.25 | | 9 | 1 | 10 | 0.9 | 0.1 | 10.0% | | | | |
| 12.5 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 25 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 50 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 100 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| Graphics | | | | | | | | | | | |
| 1.0 - | | 0 | | | | | | | | | |
| 0.9 | | | | | | | | | | | |
| 0.9 | | | | | | | | | | | |
| 0.6 | | | | | | | | | | | |
| 0.7 | | | | | | | | | | | |
| Survival | | | | | | | | | | | |
| 0.6 | | | | | | | | | | | |

0.3

Report Date: Test Code: 23 Apr-15 17:38 (p 1 of 1) 62229 | 12-3850-9715

| | | | | | | | lest | Code: | | 62229 1 | 2-3850-971 |
|-------------------|---------------------------|-------------|--------------------------|------------|-------|----------|---------|-----------|-----------------|--|-------------|
| Ceriodaphnia Sur | vival and Reprod | uction Test | | | | | | | | Paci | fic EcoRisk |
| • | 7466-8809 Apr-15 17:35 | | production nparametri | c-Multiple | e Con | nparison | | S Version | | 1.8.7 | |
| Data Transform | Zeta | Alt Hyp | Trials | Seed | | | PMSD | NOEL | LOEL | TOEL | TU |
| Untransformed | NA | C > T | NA | NA | | | 28.0% | 50 | 100 | 70.71 | 2 |
| Wilcoxon/Bonferre | oni Adj Test | | <u> </u> | | | | | | | ······································ | |
| Control vs | C-% | Test Stat | Critical | Ties | DF | P-Value | P-Type | Decision | n(a:5%) | | |
| Lab Water Control | 6.25 | 91.5 | NA | 3 | 17 | 1.0000 | Exact | Non-Sigr | nificant Effect | t | |
| | 12.5 | 89 | NA | 2 | 17 | 0.9936 | Exact | Non-Sign | nificant Effec | t | |
| | 25 | 108 | NA | 2 | 17 | 1.0000 | Exact | Non-Sign | nificant Effec | t | |
| | 50 | 79 | NA | 1 | 17 | 0.2237 | Exact | Non-Sign | nificant Effec | t | |
| | 100* | 67.5 | NA | 1 | 17 | 0.0151 | Exact | Significa | nt Effect | | |
| ANOVA Table | | | | | | | | 71 | | | |
| Source | Sum Squares | Mean Squ | ıare | DF | | F Stat | P-Value | Decision | n(α:5%) | | |
| Between | 1301.41 | 260.282 | | 5 | | 3.21 | 0.0133 | Significa | nt Effect | | |
| Error | 4300.522 | 81.14193 | | 53 | | | | - | | | |
| | 5601.933 | | | 58 | | | | | | | |

| Reproduc | ction Summary | | | | | | | | | | |
|----------|-----------------|-------|------|---------|---------|--------|-----|-----|---------|-------|---------|
| C-% | Control Type | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
| 0 | Lab Water Contr | 9 | 35.4 | 30.2 | 40.7 | 38 | 19 | 41 | 2.27 | 19.2% | 0.0% |
| 6.25 | | 10 | 31.5 | 22.5 | 40.5 | 34.5 | 0 | 44 | 3.97 | 39.9% | 11.1% |
| 12.5 | | 10 | 33.7 | 28.6 | 38.8 | 35 | 17 | 41 | 2.25 | 21.1% | 4.92% |
| 25 | | 10 | 37.8 | 35.3 | 40.3 | 38 | 32 | 42 | 1.12 | 9.4% | -6.65% |
| 50 | | 10 | 30.7 | 24.8 | 36.6 | 31 | 13 | 43 | 2.6 | 26.7% | 13.4% |
| 100 | | 10 | 23 | 14.3 | 31.7 | 26 | 0 | 35 | 3.85 | 52.9% | 35.1% |

P-Value

0.0102

<0.0001

Decision(α:1%)

Equal Variances

Non-normal Distribution

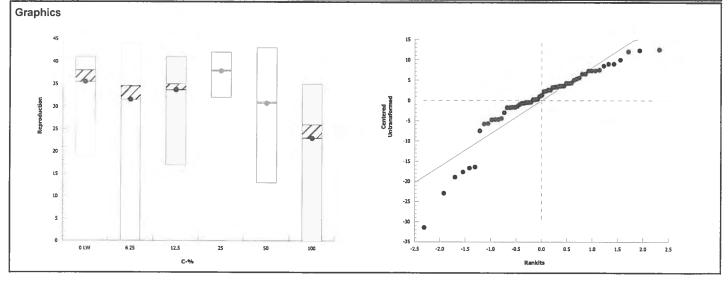
Test Stat Critical

15.1

0.945

15

0.873



Analyst: BS QA: M

000-034-187-1

Attribute

Variances

Distribution

Test

Bartlett Equality of Variance

Shapiro-Wilk W Normality

CETIS™ v1.8.7.16

Report Date: **Test Code:**

23 Apr-15 17:38 (p 1 of 1)

62229 | 12-3850-9715

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Analysis ID: Analyzed:

19-8032-7448 23 Apr-15 17:35

Analysis:

Endpoint: Reproduction

Linear Interpolation (ICPIN)

CETIS Version:

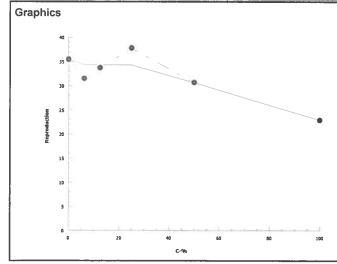
CETISv1.8.7

Official Results

| ıL | Result | ς. | Yes |
|----|--------|----|-----|

| Linear | Interpola | tion Options | | | | | |
|---------|-----------|--------------|---------|-------|-----------|------------|-------------------------|
| X Trans | sform | Y Transform | Seed | 1 | Resamples | Exp 95% CL | Method |
| Linear | | Linear | 1710 | 060 | 200 | Yes | Two-Point Interpolation |
| Point E | stimates | | | | | | |
| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL | |
| IC5 | 29.5 | 2.14 | 56 | 3.384 | 1.784 | 46.63 | |
| IC10 | 41.7 | 4.29 | 66.8 | 2.396 | 1.498 | 23.32 | |
| IC15 | 53.7 | 26.2 | N/A | 1.862 | NA | 3.816 | |
| IC20 | 65.2 | 37.7 | N/A | 1.533 | NA | 2.652 | |
| IC25 | 76.7 | 43.3 | N/A | 1.303 | NA | 2.311 | |
| IC40 | >100 | N/A | N/A | <1 | NA | NA | |
| IC50 | >100 | N/A | N/A | <1 | NA | NA | |

| Reproduc | tion Summary | | | | C | Calculated Va | riate | | | |
|----------|-----------------|-------|------|-----|-----|---------------|---------|-------|---------|--|
| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect | |
| 0 | Lab Water Contr | 9 | 35.4 | 19 | 41 | 2.27 | 6.82 | 19.2% | 0.0% | |
| 6.25 | | 10 | 31.5 | 0 | 44 | 3.97 | 12.6 | 39.9% | 11.1% | |
| 12.5 | | 10 | 33.7 | 17 | 41 | 2.25 | 7.12 | 21.1% | 4.92% | |
| 25 | | 10 | 37.8 | 32 | 42 | 1.12 | 3.55 | 9.4% | -6.65% | |
| 50 | | 10 | 30.7 | 13 | 43 | 2.6 | 8.21 | 26.7% | 13.4% | |
| 100 | | 10 | 23 | 0 | 35 | 3.85 | 12.2 | 52.9% | 35.1% | |



Analyst: XD QA: ____

000-034-187-1

CETIS™ v1.8.7.16

Appendix F

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Lehigh ITS Influent to *Ceriodaphnia* dubia: Analysis Excludes Outlier Data

CETIS Summary Report

Report Date: Test Code: 24 Apr-15 17:08 (p 1 of 2) 62230 | 06-8452-4915

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk Batch ID: 08-0377-9275 Test Type: Reproduction-Survival (7d) Analyst: **Drew Gantner** Start Date: 14 Apr-15 14:30 Protocol: EPA-821-R-02-013 (2002) Diluent: Laboratory Water **Ending Date:** 20 Apr-15 16:00 Species: Ceriodaphnia dubia Brine: Not Applicable 6d 2h **Duration:** Source: In-House Culture Age: Sample ID: 04-1198-4406 Code: **ITS Influent** Lehigh Permanente Client: Sample Date: 13 Apr-15 09:10 Material: Influent Project: 23483 Receive Date: 13 Apr-15 11:40 Source: Lehigh Permanente Sample Age: 29h (5.4 °C) Station: **ITS** Influent **Batch Note:** Statistics Excluding outliers Comparison Summary Analysis ID **Endpoint NOEL** LOEL **TOEL PMSD** TU Method 08-1326-0289 Reproduction 12.5 25 17.68 17.7% 8 Wilcoxon/Bonferroni Adj Test 03-6731-6746 Survival 100 >100 NA NA 1 Fisher Exact/Bonferroni-Holm Test **Point Estimate Summary** Analysis ID **Endpoint** Level % 95% LCL 95% UCL TU Method 16-9255-6840 Reproduction IC5 2.98 1.69 25.1 33.58 Linear Interpolation (ICPIN) IC10 5.96 3.39 28.1 16.79 IC15 27.9 5.08 31.1 3.587 IC20 31.1 25.4 34.3 3.219 IC25 34.3 29.4 38 2.919 IC40 43.8 40.1 48.8 2.281 IC50 51.5 46 79 1.94 **Reproduction Summary** C-% **Control Type** Count Mean 95% LCL 95% UCL Min Max CV% Std Err Std Dev %Effect 0 Hardness Blank 10 23.9 19.9 27.9 12 32 0.0% 1.77 5.59 23.4% 0 Lab Water Contr 9 42.1 39.2 45 36 47 1.25 3.76 8.92% -76.2% 6.25 10 36.4 27.8 45 13 48 3.8 12 33.0% -52.3% 12.5 10 38.9 33.8 44 22 47 2.23 7.06 -62.8% 18.2% 25 9 37.8 35.6 40 33 42 0.954 2.86 7.58% -58.1% 50 10 21.2 17.6 24.8 14 28 1.6 5.07 23.9% 11.3% 100 10 16.5 12.9 20.1 10 26 1.57 4.97 30.1% 31.0% **Survival Summary** C-% **Control Type** Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV% %Effect 0 Hardness Blank 1 1 1 1 1 0 0 0.0% 0.0% 0 Lab Water Contr 10 1 1 1 0 0 1 1 0.0% 0.0% 6.25 10 0.9 0.674 0 1 1 0.1 0.316 35.1% 10.0% 12.5 10 1 1 1 1 1 0 0 0.0% 0.0% 25 10 1 1 0 0 1 1 1 0.0% 0.0% 50 10 1 1 1 1 0 0 1 0.0% 0.0% 100 10 1 1 1 1 1 0 0 0.0% 0.0%



Report Date: Test Code:

24 Apr-15 17:08 (p 2 of 2)

62230 | 06-8452-4915

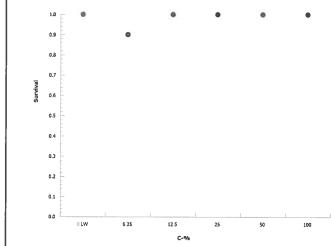
| Ceriodapl | nnia Survival and Re | production | on Test | | | | | Code. | | | ic EcoRisk |
|------------|----------------------|------------|---------|-------|-------|-------|-------|-------|---------|-------|-------------|
| Reproduc | tion Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Hardness Blank | 12 | 30 | 28 | 24 | 22 | 32 | 24 | 24 | 23 | 20 |
| 0 | Lab Water Contr | , | 43 | 47 | 45 | 41 | 42 | 46 | 42 | 36 | 37 |
| 6.25 | | 23 | 37 | 46 | 43 | 25 | 13 | 48 | 48 | 40 | 41 |
| 12.5 | | 22 | 42 | 39 | 41 | 45 | 44 | 37 | 47 | 36 | 36 |
| 25 | | | 37 | 35 | 38 | 33 | 42 | 39 | 41 | 39 | 36 |
| 50 | | 15 | 20 | 19 | 25 | 28 | 21 | 17 | 27 | 26 | 14 |
| 100 | | 15 | 17 | 10 | 10 | 13 | 18 | 22 | 17 | 26 | 17 |
| Survival D | etail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Hardness Blank | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | Lab Water Contr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.25 | | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 12.5 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Survival B | inomials | | | | | | | · | <u></u> | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Hardness Blank | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 0 | Lab Water Contr | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 6.25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 0/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 12.5 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 50 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 100 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |

Analyst: Bloods QA: M

Report Date: Test Code: 23 Apr-15 17:18 (p 1 of 1)

62230 | 06-8452-4915

| -eriouapiinia | a Survival and Re | produ | ction Test | | | | | | | Paci | fic EcoRisl |
|---------------------------|---------------------------------|-------|--------------------------------|--------------------|-------------|----------|----------------|---------------------------|---------------|-------|-------------|
| Analysis ID: Analyzed: | 03-6731-6746 23 Apr-15 17:18 | В | Endpoint: Sur Analysis: STF | vival 2x2 Conti | ngency Tabl | es | | S Version: al Results: | CETISv Yes | 1.8.7 | |
| Data Transfo | orm | Zeta | Alt Hyp | Trials | Seed | | | NOEL | LOEL | TOEL | TU |
| Untransforme | d | | C > T | NA | NA | | | 100 | >100 | NA | 1 |
| Fisher Exact/ | /Bonferroni-Holm | Test | | | | | | | | | |
| Control | vs C-% | | Test Stat | P-Value | P-Type | Decision | (α:5%) | | | | |
| Lab Water Co | ontrol 6.25 | | 0.5 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 12.5 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 25 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 50 | | 1 | 1.0000 | Exact | _ | ificant Effect | | | | |
| | 100 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| Data Summai | ry | | | | | | | | | | |
| C-% | Control Type | NR | R | NR + R | Prop NR | Prop R | %Effect | | | | |
|) | Lab Water Cont | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 6.25 | | 9 | 1 | 10 | 0.9 | 0.1 | 10.0% | | | | |
| 12.5 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 25 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 50 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |



Report Date:

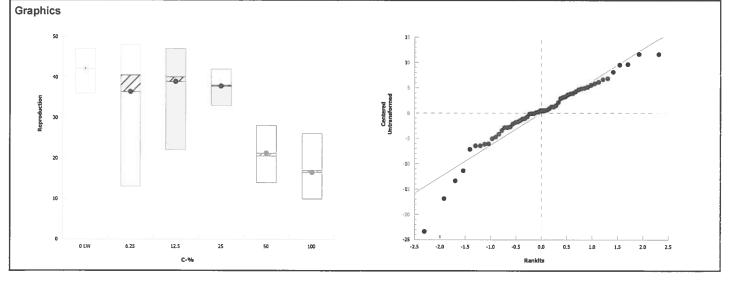
23 Apr-15 17:18 (p 1 of 1)

Test Code: 62230 | 06-8452-4915

| | | | | | | | | | rest | Code: | | 62230 0 | 0-8452-491 |
|-----------------|-------|-------------------------|---------------------|---------|--------------------------|------------|-------|---------------------------------------|---------|------------|---------------|-----------|-------------|
| Ceriodaphnia S | urvi | val and Reprod | uction Tes | st | | | | | | | | Pacif | fic EcoRisk |
| | | 326-0289 pr-15 17:18 | Endpoin Analysis | | production parametric | :-Multiple | : Cor | mparison | | S Version: | A | 1.8.7 | |
| Data Transform | | Zeta | Alt | Нур | Trials | Seed | | | PMSD | NOEL | LOEL | TOEL | TU |
| Untransformed | | NA | C > | ·T | NA | NA | | | 17.7% | 12.5 | 25 | 17.68 | 8 |
| Wilcoxon/Bonfe | error | ni Adj Test | | | | | | · · · · · · · · · · · · · · · · · · · | | | | | |
| Control | VS | C-% | Tes | st Stat | Critical | Ties | DF | P-Value | P-Type | Decision | ι(α:5%) | | |
| Lab Water Contr | ol | 6.25 | 92 | | NA | 4 | 17 | 1.0000 | Exact | Non-Sign | ificant Effec | t | |
| | | 12.5 | 87 | | NA | 6 | 17 | 0.7562 | Exact | Non-Sign | ificant Effec | ct | |
| | | 25* | 59. | 5 | NA | 4 | 16 | 0.0500 | Exact | Significar | nt Effect | | |
| | | 50* | 55 | | NA | 0 | 17 | <0.0001 | Exact | Significar | nt Effect | | |
| | | 100* | 55 | | NA | 0 | 17 | <0.0001 | Exact | Significar | nt Effect | | |
| ANOVA Table | | | | | | | | | | | | <u></u> | |
| Source | | Sum Squares | Me | an Squ | are | DF | | F Stat | P-Value | Decision | ι(α:5%) | | |
| Between | | 5458.311 | 109 | 1.662 | | 5 | | 23.9 | <0.0001 | Significar | nt Effect | | |
| Error | | 2377.844 | 45. | 72778 | | 52 | | | | | | | |
| Total | | 7836.155 | | | | 57 | | | | | | | |

| Attribute | Test | Test Stat | Critical | P-Value | Decision(a:1%) | |
|--------------|-------------------------------|-----------|----------|---------|-------------------------|--|
| Variances | Bartlett Equality of Variance | 21.8 | 15.1 | 0.0006 | Unequal Variances | |
| Distribution | Shapiro-Wilk W Normality | 0.937 | 0.944 | 0.0049 | Non-normal Distribution | |

| Reproduc | ction Summary | | | | | | | | | | |
|----------|-----------------|-------|------|---------|---------|--------|-----|-----|---------|-------|---------|
| C-% | Control Type | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
| 0 | Lab Water Contr | 9 | 42.1 | 39.2 | 45 | 42 | 36 | 47 | 1.25 | 8.92% | 0.0% |
| 6.25 | | 10 | 36.4 | 27.8 | 45 | 40.5 | 13 | 48 | 3.8 | 33.0% | 13.6% |
| 12.5 | | 10 | 38.9 | 33.8 | 44 | 40 | 22 | 47 | 2.23 | 18.2% | 7.63% |
| 25 | | 9 | 37.8 | 35.6 | 40 | 38 | 33 | 42 | 0.954 | 7.58% | 10.3% |
| 50 | | 10 | 21.2 | 17.6 | 24.8 | 20.5 | 14 | 28 | 1.6 | 23.9% | 49.7% |
| 100 | | 10 | 16.5 | 12.9 | 20.1 | 17 | 10 | 26 | 1.57 | 30.1% | 60.8% |



Report Date:

23 Apr-15 17:18 (p 1 of 1)

Test Code:

62230 | 06-8452-4915

Ceriodaphnia Survival and Reproduction Test

Analysis ID: 16-9255-6840 Endpoint: Reproduction
Analyzed: 23 Apr-15 17:18 Analysis: Linear Interpolation (ICPIN)

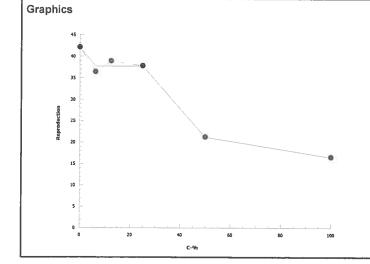
Pacific EcoRisk

CETIS Version: CETISv1.8.7

Official Results: Yes

| X Trans | sform | Y Transform | See | d l | Resamples | Exp 95% CL | Method | |
|---------|----------|-------------|---------|--------|-----------|------------|-------------------------|--|
| Linear | | Linear | 1063 | 3393 2 | 200 | Yes | Two-Point Interpolation | |
| Point E | stimates | | | | | | | |
| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL | • | |
| IC5 | 2.98 | 1.69 | 25.1 | 33.58 | 3.987 | 59.07 | | |
| IC10 | 5.96 | 3.39 | 28.1 | 16.79 | 3.555 | 29.54 | | |
| IC15 | 27.9 | 5.08 | 31.1 | 3.587 | 3.214 | 19.69 | | |
| IC20 | 31.1 | 25.4 | 34.3 | 3.219 | 2.916 | 3.943 | | |
| IC25 | 34.3 | 29.4 | 38 | 2.919 | 2.635 | 3.404 | | |
| IC40 | 43.8 | 40.1 | 48.8 | 2.281 | 2.048 | 2.497 | | |
| IC50 | 51.5 | 46 | 79 | 1.94 | 1.266 | 2.173 | | |

| Reproduc | ction Summary | | | | (| Calculated Va | riate | | |
|----------|-----------------|-------|------|-----|-----|---------------|---------|-------|---------|
| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect |
| 0 | Lab Water Contr | 9 | 42.1 | 36 | 47 | 1.25 | 3.76 | 8.92% | 0.0% |
| 6.25 | | 10 | 36.4 | 13 | 48 | 3.8 | 12 | 33.0% | 13.6% |
| 12.5 | | 10 | 38.9 | 22 | 47 | 2.23 | 7.06 | 18.2% | 7.63% |
| 25 | | 9 | 37.8 | 33 | 42 | 0.954 | 2.86 | 7.58% | 10.3% |
| 50 | | 10 | 21.2 | 14 | 28 | 1.6 | 5.07 | 23.9% | 49.7% |
| 100 | | 10 | 16.5 | 10 | 26 | 1.57 | 4.97 | 30.1% | 60.8% |



| C | lient: | | | Lehigh Pe | ermanent | e | | M | aterial: | | | S Influ | | | | Te | st Date: | 4/14/15 |
|-------------------|--------|----------|----------|-----------|----------|------------------|--------|----|----------|------------|---------|---------|--------------|-----|-----|---------|----------|--|
| Ргој | ect #: | 240 |)35 | | Test ID: | 622 | 30 | F | Random | ization: | [0. | 6.13 | 10. | 2.1 | | Control | Water: | Modified EPAMH |
| | Day | рН | | D.O. | | Cond. | Temp | | | | | | eproduct | | | | | SIGN-OFF |
| | | New | Old | New | Old | (µS/cm) | (°C) | Α | В | С | D | E | F | G | Н | I | J | Datd MIS New WQ: Test Init. YJ |
| | 0 | 8.10 | | 8.6 | | 314 | 25.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Ò | 0 | 0 | Sol'n Prep SIV ASF Time 430 |
| | 1 | 8.00 | 806 | 8-1 | 53 | 824 | 25.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ථ | 0 | Date: 415/15 New WQ: Counts: VA Sol'n Prep: Old WQ: Time \ 520 |
| | 2 | 8,26 | 8.10 | 8.7 | 8.4 | 318 | 25.0 | 0 | 0 | Q | 0 | 0 | 0 | D | 8 | 0 | 0 | Date: 4116/15 New WQ: 9VV Counts: Apresol'n Prep: Did WQ: 9VV Time: 1 128 |
| lo. | 3 | 8.04 | 8.14 | 8.7 | 7-8 | 322 | 24.7 | 0 | 0 | 7 | 8 | 8 | 7 | 7 | 6 | 6 | 5 | Date: 4/17/15 New WQ: F Counts CO Sol'n Prep: COId WQ: NB Time 1736 |
| r Cont | 4 | 8104 | 4.85 | 8.3 | 67 | 382 | 24.8 | 6 | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 114-4 New WQ: MJM Counts 10 Sol'n Prep: HF Old WQ: AU Time: 1615 |
| Lab Water Control | 5 | 8,19 | 7.97 | 7.9 | | 338 | 25.0 | 13 | 12 | 16 | 14 | 12 | 13 | 15 | 14 | 12 | 13 | Date: 4/19/15New WQ: mm Counts MVF Sol'n Prep: Affire Old WQ: CP Time 110 |
| La | 6 | | 8.04 | ` | 7.7 | | 24.9 | 0 | 23 | 24 | 23 | 21 | 22 | 24 | 22. | 18 | 19 | Date: Wizolis New WQ: Counts SY Sol'n Prep: Old WQ: Time: 1600 |
| | 7 | | 0.0 1 | | | | | | | | | | | | | | | Date: New WQ: Counts: Sol'n Prep: Old WQ: Time: |
| | 8 | | | | | | | | | | | | | | | | | Date: Old WQ: Counts: Time: |
| | | | | | | | Total= | 19 | 43 | 477 | 45 | 41 | 42 | 46 | 42 | 36 | 37 | Mean Neonates/Female = 39.8 |
| | Day | p New | H Old | D. New | .O. | Cond. (µS/cm) | 888888 | A | В | С | Surviva | / Repro | duction F | G | Н | 1 | J | Sample ID |
| | 0 | 8.05 | | 8.6 | | 390 | | 0 | 0 | 0 | 0 | 0 | 9 | Ð | 0 | 0 | 0 | 38290 |
| | 1 | - | d 60 | | 8,3 | 415 | | 0 | 9 | 0 | 0 | D | 0 | 0 | 0 | 0 | 0 | 38290 |
| | 2 | 798 | 8.02 | 8-1 | - | 1 | | | | 0 | | | | | | | | |
| | | 8.15 | 8.08 | 8.7 | 8.5 | 400 | | 0 | 0 | \bigcirc | 0 | 0 | 0 | 2 | 0 | 0 | 0 | 38336 |
| | 3 | 8.10 | 8,20 | 8.8 | 8.1 | 422 | | 0 | O | 0 | 0 | 0 | 1. 8.9% | 8 | 9 | 5 | 7 | 38336 |
| 6.25% | 4 | 7.90 | 7.88 | 8.0 | 7.8 | 396 | | 8 | 6 | σ | 0 | 4 | 10 | 0 | 76 | 14 | 0 | 38357 |
| 9 | 5 | 8.07 | 8.09 | 8.0 | 7.5 | 399 | | 15 | 12 | 17 | 15 | 3 | _ | 16 | iV | 0 | 14 | 38357 |
| | 6 | | 8.09 | _ | 78 | 414 | | 0 | 19 | 23 | 22 | 13 | _ | 24 | 23 | 21 | 20 | |
| | 7 | | 31/10/15 | | | | | | | | | | _ | | ~ | | | |
| 1 | 8 | | | | | | | | | | | | _ | | _ | | | |
| | | | | | | | Total= | 23 | 37 | 46 | 43 | 25 | ×/13 | 48 | 341 | 40 | 41 | Mean Neonates/Female = 36.4 |

| | | | | Sno | ort-Teri | iii Ciiro | IIIC 3-1 | roou | Certo | upnn | uu uu | <i>ou</i> Su | II VIVA | i oc ix | cprou | uctioi | II RUSU | libely = |
|-------|--------|------|------|----------|-----------|------------------|----------|------|----------|------|-------|--------------|---------|---------|-------|---------|----------|------------------------------|
| | lient: | | I | ehigh Pe | ermanente | <u>e</u> | | . M | aterial: | | ITS | S Influe | ent | | | Tes | st Date: | 9/19/15 |
| Proj | ect #: | 240 |)35 | | Test ID: | 622 | 30 | | | | | | | | | Control | Water: | Modified EPAMH |
| | Day | рН | | D.O. | | Cond. | Temp | | | | | vival / Re | | | | | | SIGN-OFF |
| | | New | Old | New | Old | (μS/cm) | (°C) | A | В | С | D | Е | F | G | Н | 1 | J | |
| | 0 | 8.04 | | 8.8 | | 461 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | I | 7.95 | 8,09 | 8.2 | 8.4 | 477 | | ව | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 8.07 | 8.13 | 8.7 | 8.6 | 473 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1 | 3 | 8.04 | 8.23 | 8.9 | 812 | 466 | | 0 | Ô | 7 | 5 | 7 | 6 | 5 | ٦ | 5 | 6 | |
| 12.5% | 4 | | 7.92 | | 8.0 | 465 | | 7 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | O | |
| 12 | 5 | 8.02 | 8.17 | 8,1 | 7.6 | 471 | | 15 | 110 | 14 | 15 | ila | 5 | 14 | 7 | 12 | 12 | |
| | 6 | | 8.14 | - | 8.0 | 507 | | 0 | 19 | 18 | 21 | 22 | 22 | 18 | 23 | 19 | 18 | |
| | 7 | | 0.1 | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | 44 4 | كاحد | | | | |
| | | | | | | | Total= | 22 | 42 | 39 | 41 | | * | .37 | 47 | 36 | 36 | Mean Neonates/Female = \$8.9 |
| | Day | | Н | | .0. | Cond. (µS/cm) | ******** | | В | | | / Repro | | G | Н | 1 | J | |
| | | New | Old | New | Old | 1 | | A | В | С | D | E | F | 0 | | 0 | 0 | |
| | 0 | 8,00 | | 8.9 | | 594 | | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | | | |
| | I | 7.93 | 8.16 | 8.3 | 8.4 | 620 | | 0 | 0 | . O | 6 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 7.99 | 8.16 | 8.8 | 8.5 | 607 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 7.98 | 8,36 | 9.0 | 8.4 | 592 | | 0 | 0 | 0 | 7 | 5 | 1 | 7 | 7 | 5 | 5 | |
| 25% | 4 | 7.88 | 7,92 | 8.4 | 8.2 | 599 | | ר | 6 | 0 | 0 | 0 | 0 | 0 | O | 0 | O | |
| 61 | 5 | 7.99 | 8.26 | 8,1 | 7.8 | 610 | | 13 | 13 | 12 | 13 | 11 | 16 | 15 | 14 | 12 | 13 | |
| | 6 | _ | 8.19 | _ | 7.9 | 632 | | 0 | 18 | 17 | 18 | 17 | 19 | 17 | 20 | 19 | 18 | |
| III. | _ | | | | | | | | | | | | | | | | | |
| | 7 | 1 | 1 | 1 | 1 | | | :1 | | l | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | 39 | | |

| C | lient: | | | | | | | M | aterial: | - | ITS | SInflue | ent | | | Tes | st Date: | 4/14/15 |
|------|--------|---------|---|------|----------|------------------|--------------|---------|----------|----|---------|-----------|---------------|----|----|---------|----------|-----------------------------|
| Proj | ect#: | 240 |)35 | | Test ID: | 6223 | 30 | | | | | | | | + | Control | Water: | Modified EPAMH |
| | Day | рН | | D.O. | | Cond. (µS/cm) | Temp (°C) | | | | | vival / R | eproduct F | | | | | SIGN-OFF |
| | 0 | New O 2 | Old | New | Old | | | A | В | C | D | E O | ا | G | Н | 0 | 0 | |
| | | 8.03 | 0.0000000000000000000000000000000000000 | 9.0 | | 847 | | 0 | 0 | 0 | 0 | | | 0 | | | | |
| | ı | 7.93 | 8.27 | 8.5 | 8.4 | 861 | | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 7.92 | 8.26 | 8.8 | 8.5 | 859 | | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 3 | 7.89 | 8.39 | 9.3 | 8,0 | 946 | | \circ | 0 | 9 | 6 | 1. | 8 | 6 | 6 | 0 | 6 | |
| 20% | 4 | 7.84 | 8,1D | 8.7 | 8.2 | 936 | | 6 | 6 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 5(| 5 | | 8.38 | | 8.1 | 853 | | 9 | 9 | 10 | 12 | 12 | 13 | 11 | 9 | 10 | 8 | |
| | 6 | | 8.29 | _ | 8.1 | 880 | | 0 | 5 | 3 | 7 | 9 | 0 | 0 | 12 | 10 | 0 | |
| | 7 | | 0.001 | | | 000 | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| Ì | | | | | | | Total= | 15 | 20 | 19 | 25 | 28 | 21 | 17 | 27 | 26 | 14 | Mean Neonates/Female = 21.2 |
| | Day | р | Н | D | .O. | Cond. | | | | | Surviva | l / Repro | duction | | | | T . | |
| | | New | Old | New | Old | (μS/cm) | | Α | В | С | D | Е | F | G | Н | | 1 | |
| | 0 | 7.93 | | 9.2 | | 1295 | | 0 | 0 | 0 | 0 | 0 | 0 | 9 | D | 0 | 0 | |
| | 1 | 7.95 | 8.21 | 9-0 | 8.4 | 1321 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | D | 0 | 0 | |
| | 2 | 7.86 | 8.27 | 8.8 | 8.5 | 1302 | | O | 0 | 0 | 0 | Ò | 0 | 0 | 0 | 0 | O | |
| | 3 | 7.76 | | | 8.5 | 1286 | | 0 | 0 | 5 | 4 | 5 | 7 | 0 | 1 | 10 | 6 | |
| 100% | 4 | 7.80 | 8.09 | | 8.3 | 1278 | | 6 | 6 | 0 | G | 0 | 0 | 0 | 0 | O | B | |
| 0 0 | 5 | | 8.27 | | 8.1 | 1297 | | 9 | 11 | 5 | 0 | 8 | 11. | 12 | 10 | 9 | 11 | |
| | 6 | _ | 8.19 | | 8.3 | 1305 | | 0 | 0 | 0 | 0 | 0 | 0 | 4 | 0 | H | 0 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 15 | 14 | 10 | 10 | 13 | 18 | 22 | 17 | 26 | 17 | Mean Neonates/Female = 16.5 |

Report Date: Test Code: 24 Apr-15 17:06 (p 1 of 1)

62230 | 06-8452-4915

| | | | | | | | reat oode. | | 02200 00-0402-401 |
|---------------------------|--------------------------------|--------|--------------------------------|---------|----------------------|----------|------------------------------|------------|---------------------|
| Ceriodaphn | ia Survival and Re | eprodu | iction Test | | | | | | Pacific EcoRisk |
| Analysis ID: Analyzed: | 10-1550-2479 24 Apr-15 16:5 | 5 | Endpoint: Sur Analysis: Sin | | ntingency T a | ble | CETIS Versi Official Resu | | v1.8.7 |
| Data Transfe | orm | Zeta | Alt Hyp | Trials | Seed | • | Test R | esult | |
| Untransform | ed | | C > T | NA | NA | | Passe | s survival | |
| Fisher Exac | t Test | | | : | | | | - | |
| Control | vs Control | | Test Stat | P-Value | P-Type | Decision | (α:5%) | | |
| Lab Water C | ontrol Hardness | Blank | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | |
| Data Summa | ary | | | | | | | | |
| C-% | Control Type | NR | R | NR + R | Prop NR | Prop R | %Effect | | |
| 0 | Hardness Blank | 10 | 0 | 10 | 1 | 0 | 0.0% | | |
| 0 | Lab Water Cont | 10 | 0 | 10 | 1 | 0 | 0.0% | | |
| Graphics | | | | | | | | | |
| 1.0 | | | | | | | | | |
| 0.9 | | | | | | | | | |
| 1 | | | | | | | | | |
| 8.0 | | | | | | | | | |
| 0.7 | | | | | | | | | |
| Survival 90 | | | | | | | | | |
| 0.5 | | | | | | | | | |
| 0.4 | | | | | | | | | |
| E | | | | | | | | | |
| 0.3 | | | | | | | | | |
| 0.2 | | | | | | | | | |
| 0.1 | | | | | | | | | |
| 0.0 | 0 HA | | 0 LW | | | | | | |
| | **** | C-84 | O LIV | | | | | | |

Report Date:

24 Apr-15 17:06 (p 1 of 1) 62230 | 06-8452-4915

Test Code:

| | | | | | | | | Test | Code: | | 62230 0 | 06-8452-491 |
|---------------------------|-----------------------------------|---|---------|------------|-----------------------------|--------------|------------|---------------------------------------|-----------------------------|---------------|-----------|--------------|
| Ceriodaphni | a Surv | ival and R | eprodu | ction Test | | | | | | | Pac | ific EcoRisk |
| Analysis ID: Analyzed: | | 00-3170-1734 Endp 24 Apr-15 16:55 Anal | | | eproduction onparametric | Two Sam | ple | | IS Version: cial Results | CETISv Yes | 1.8.7 | |
| Data Transfo | orm | | Zeta | Alt Hyp | Trials | Seed | | PMSD | Test Resi | ılt | | |
| Untransformed NA C > T | | | | C > T | NA | NA | | 13.6% | Fails repre | duction | | - |
| Wilcoxon Ra | ank Sur | n Two-Sar | nple T | est | | | | | | | | |
| Control | vs | Control | | Test Stat | Critical | Ties [| OF P-Value | P-Type | Decision | α:5%) | | |
| Lab Water Co | ab Water Control Hardness Blank | | 64 | NA | 0 1 | 0.0005 | Exact | Significan | Effect | | | |
| ANOVA Tabl | е | | | | | | | = | | | | |
| Source | | Sum Squa | ares | Mean Sq | uare | DF | F Stat | P-Value | Decision(| α:5%) | | |
| Between | | 1264.05 | | 1264.05 | | 1 | 26 | <0.0001 | Significan | Effect | | |
| Error | | 874.5 | | 48.58333 | | 18 | | | | | | |
| Total | | 2138.55 | | | | 19 | | | | | | |
| Distributiona | al Tests | | | | | | | | | | | |
| Attribute | | Test | | | Test Stat | Critical | P-Value | Decision | (α:1%) | | | |
| Variances | | Variance | Ratio F | | 2.11 | 6.54 | 0.2803 | Equal Va | riances | | | |
| Distribution | Distribution Shapiro-Wilk W Norma | | | | 0.852 | 0.866 0.0057 | | Non-normal Distribution | | | | |
| Reproductio | n Sumi | nary | | | | | | · · · · · · · · · · · · · · · · · · · | | | | |
| C-% | Conti | ol Type | Coun | t Mean | 95% LCL | 95% UC | L Median | Min | Max | Std Err | CV% | %Effect |
| 0 | Lab V | Vater Cont | 10 | 39.8 | 34 | 45.6 | 42 | 19 | 47 | 2.57 | 20.4% | 0.0% |
| 0 | Hardr | ess Blank | 10 | 23.9 | 19.9 | 27.9 | 24 | 12 | 32 | 1.77 | 23.4% | 39.9% |
| Graphics | | | | | | | | | | | | |
| 50 — | | | | | | | | | | | | |
| ~ | | | | | | | 10 | | | | | • |
| | | | | | | | 5 | | | | • | |
| 40 | | | | 11/16 | | | - | | | | | |
| 5 | | | | | | | g 0 | | | | | |
| luction | | | | | | | formed | | • | | | |

1.5

0 HA

C-%

| Client: Lehigh Permanente | | | | | | | Material: Hardness Blank | | | | | | Test Date: _ | | | | | |
|---------------------------|-----|------|-------------------------------|-------|-----|------------------|--------------------------|----|------|----------------|---------|------------|---------------------|-----------|----|-----|----|---|
| Project #:24035 | | | Randomization: 10.6.13/10.7.1 | | | | | | 2.1 | Control Water: | | | Mod EPAINH 15% AME, | | | | | |
| | Day | New | H Old | New D | .O. | Cond. (µS/cm) | Temp (°C) | A | В | С | Su D | rvival / F | eproduc F | tion G | Н | l I | J | SIGN-OFF |
| | 0 | 8.09 | | 8.4 | | 1628 | 25.1 | 0 | 0 | 0 | Ò | 0 | 0 | 0 | Q | ථ | 0 | Date: 4 14 15 New WQ: Test Init.: 4 5 Sol'n Prep Pol V MFF Time: 1430 |
| | 1 | 8.12 | 8.12 | 9-0 | 8.3 | 1699 | 253 | 0 | 0 | 0 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | Date 415/1 New WO. Counts: YJ Sol'n Prep: YJ Old WQ: 7 Time: \$20 |
| | 2 | 7.91 | 8.08 | 9.7 | 8.3 | 1677 | 25.0 | 0 | 0 | 0 | 0 | 0 | O | 0 | 0 | 0 | 9 | Date: 4/16/15 New WQ: SVV Counts: APC Sol'n Prep: MF Old WQ: SVV Time: 1428 |
| k | 3 | 5.07 | 8.12 | 11.6 | 8.2 | 1643 | 24.7 | 0 | 0 | 8 | 6 | 4 | 7 | 7 | 6 | 6 | 5 | Date: 4/17/15 New WQ5 Counts: CO) Sol'n Prep: COId WQ: NB Time: 73C |
| Hardness Blank | 4 | 8.04 | 8.13 | 10.3 | 8.2 | 1674 | રૂપ.ષ્ઠ | 2 | 6 | 6 | G | ٥ | 0 | 0 | ٥ | 0 | 0 | Sol'n Prep: 19-5 Old WQ: AW Time: 1015 |
| Hardn | 5 | 8.06 | 8.16 | 9.1 | 7,7 | 1679 | 25.0 | 7 | 8 | 6 | 10 | 0 | 8 | 4 | 6 | 4 | Ve | Date: 4/19/15 New WQ: MTM Counts: MA Sol'n Prep: MF Old WQ: CP Time TID |
| | 6 | _ | 8.10 | | 7.7 | 1732 | 24.9 | 0 | 16 4 | 121 | 8 | 12 | 17 | 13 | 12 | 13 | 9 | Date: 4/20/15 New WQ: — Counts: 544 Sol'n Prep: — Old WQ: SVV Time: 1600 |
| | 7 | | | | | | | | | | | | | | | | | Date: New WQ: Counts: Sol'n Prep: Old WO: Time: |
| | 8 | | | | | | | | | | | | | | | | | Date: Old WQ: Counts: Time: |
| | | | | | | | Total= | 12 | 30 | 28 | 24 | 22 | 32 | 24 | 24 | 23 | 28 | Mean Neonates/Female = 239 |

Appendix G

Summary of Statistics for the Evaluation of the Chronic Toxicity of Lehigh ITS Influent to *Ceriodaphnia dubia*:

Analysis Includes Outlier Data

CETIS Summary Report

Report Date: Test Code:

24 Apr-15 16:56 (p 1 of 2) 62230 | 06-8452-4915

| | | | | | | | 1 | est Code: | | 62230 0 | 6-8452-491 | | |
|---------------|-------------------|---------------|-----------------|----------------|---------------|---------|-------|-----------------------|--------------------|--------------------|------------|--|--|
| Ceriodaphnia | Survival and Re | eproduction | on Test | | | | | | | Paci | fic EcoRis | | |
| Batch ID: | 08-0377-9275 | Tes | st Type: | Reproduction-S | Survival (7d) | | 1 | Analyst: | Drew Gantner | | | | |
| Start Date: | 14 Apr-15 14:30 | | | | | | | Diluent: | Laboratory Wat | er | | | |
| Ending Date: | 20 Apr-15 16:00 |) Sp | ecies: | Ceriodaphnia d | , | | | Brine: Not Applicable | | | | | |
| Duration: | 6d 2h | • | urce: | In-House Cultu | | | | \ge: | • • | | | | |
| Sample ID: | 04-1198-4406 | Co | de: | ITS Influent | | | | Client: | Lehigh Perman | onto | | | |
| = | 13 Apr-15 09:10 | | terial: | Influent | | | | | 23483 | ente | | | |
| | : 13 Apr-15 11:40 | | urce: | Lehigh Perman | onto | | | Project: | 23403 | | | | |
| Sample Age: | • | | urce. ition: | ITS Influent | ente | | | | | | | | |
| | | | | 113 miliuent | | | | | | | | | |
| Batch Note: | Statistics Includ | ling outlier: | S | | | | | | | | | | |
| Comparison S | Summary | | | | | | | | | | | | |
| Analysis ID | Endpoint | | NOEL | | TOEL | PMSD | TU | Meth | od | | | | |
| 10-7567-6941 | Reproduction | | 25 | 50 | 35.36 | 19.6% | 4 | | Many-One Rani | | | | |
| 05-6322-6353 | Survival | | 100 | >100 | NA | NA | 1 | Fishe | r Exact/Bonferro | ni-Holm T e | est | | |
| Point Estimat | e Summary | | | | | - | | | | | | | |
| Analysis ID | Endpoint | | Level | % | 95% LCL | 95% UCL | TU | Meth | od | | | | |
| 04-5104-7926 | Reproduction | | IC5 | 5.78 | 1.65 | 27.9 | 17.29 | Linea | r Interpolation (I | CPIN) | | | |
| | | | IC10 | 25.3 | 3.31 | 30.7 | 3.952 | | | | | | |
| | | | IC15 | 28.7 | 4.96 | 33.7 | 3.489 | | | | | | |
| | | | IC20 | 32 | 20.4 | 37.3 | 3.122 | | | | | | |
| | | | IC25 | 35.4 | 26.9 | 40.8 | 2.826 | | | | | | |
| | | | IC40 | 45.5 | 39.7 | 58.7 | 2.199 | | | | | | |
| | | | IC50 | 63.8 | 45.9 | 94.5 | 1.567 | | | | | | |
| Reproduction | Summary | | | | | | | | | | | | |
| C-% | Control Type | Count | Mean | 95% LCL | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | %Effect | | |
| | Hardness Blank | | 23.9 | 19.9 | 27.9 | 12 | 32 | 1.77 | 5.59 | 23.4% | 0.0% | | |
| | Lab Water Contr | | 39.8 | 34 | 45.6 | 19 | 47 | 2.57 | 8.12 | 20.4% | -66.5% | | |
| 6.25 | | 10 | 36.4 | 27.8 | 45 | 13 | 48 | 3.8 | 12 | 33.0% | -52.3% | | |
| 12.5 | | 10 | 38.9 | 33.8 | 44 | 22 | 47 | 2.23 | 7.06 | 18.2% | -62.8% | | |
| 25 | | 10 | 36 | 31.5 | 40.5 | 20 | 42 | 1.97 | 6.24 | 17.3% | -50.6% | | |
| 50 100 | | 10 | 21.2 | 17.6 | 24.8 | 14 | 28 | 1.6 | 5.07 | 23.9% | 11.3% | | |
| 100 | - | 10 | 16.5 | 12.9 | 20.1 | 10 | 26 | 1.57 | 4.97 | 30.1% | 31.0% | | |
| Survival Sumi | , | | | | | | | | | | | | |
| | Control Type | Count | Mean | | 95% UCL | | Max | Std E | | CV% | %Effect | | |
| | Hardness Blank | | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | | |
|) | Lab Water Contr | | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | | |
| 3.25 12.5 | | 10 | 0.9 | 0.674 | 1 | 0 | 1 | 0.1 | 0.316 | 35.1% | 10.0% | | |
| | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | | |
| 25 50 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | | |
| 100 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | | |
| 100 | | 10 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% | | |



Report Date:

24 Apr-15 16:56 (p 2 of 2)

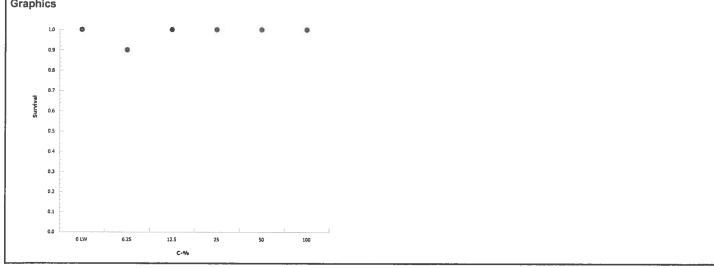
| 02110 | Julilliary Repo | | Tes | t Code: | | 62230 06-8452-4915 | | | | | |
|------------|----------------------|-------------|---------|--|-------|----------------------|-------|-------|-------|-------|------------|
| Ceriodap | hnia Survival and Re | producti | on Test | | | | | | | Paci | ic EcoRisk |
| Reproduc | ction Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Hardness Blank | 12 | 30 | 28 | 24 | 22 | 32 | 24 | 24 | 23 | 20 |
| 0 | Lab Water Contr | 19 | 43 | 47 | 45 | 41 | 42 | 46 | 42 | 36 | 37 |
| 6.25 | | 23 | 37 | 46 | 43 | 25 | 13 | 48 | 48 | 40 | 41 |
| 12.5 | | 22 | 42 | 39 | 41 | 45 | 44 | 37 | 47 | 36 | 36 |
| 25 | | 20 | 37 | 35 | 38 | 33 | 42 | 39 | 41 | 39 | 36 |
| 50 | | 15 | 20 | 19 | 25 | 28 | 21 | 17 | 27 | 26 | 14 |
| 100 | | 15 | 17 | 10 | 10 | 13 | 18 | 22 | 17 | 26 | 17 |
| Survival [| Detail | | | | | | | | | · | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Hardness Blank | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 0 | Lab Water Contr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.25 | | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 |
| 12.5 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Survival E | Binomials | | | ······································ | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Hardness Blank | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 0 | Lab Water Contr | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 6.25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 0/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 12.5 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 50 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 100 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |

Report Date: Test Code:

23 Apr-15 17:11 (p 1 of 1)

62230 | 06-8452-4915

| | | | | | | | Test | Code: | | 62230 0 | 6-8452-4915 |
|------------------|-------------------------------|-------|-------------|----------------------|-------------|----------|----------------|---------------------------|---------------|-----------|-------------|
| Ceriodaphnia Su | rvival and Re | produ | iction Test | | | | | | | Paci | fic EcoRisk |
| • | 5-6322-6353 3 Apr-15 17:09 | 9 | | vival P 2x2 Conti | ngency Tabl | es | | S Version: al Results: | CETIS\ Yes | 1.8.7 | |
| Data Transform | | Zeta | Alt Hyp | Trials | Seed | | | NOEL | LOEL | TOEL | TU |
| Untransformed | | | C > T | NA | NA | | | 100 | >100 | NA | 1 |
| Fisher Exact/Bo | nferroni-Holm | Test | | | | <u> </u> | | | | | |
| Control vs | C-% | | Test Stat | P-Value | P-Type | Decision | (a:5%) | | | | |
| Lab Water Contro | ol 6.25 | | 0.5 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 12.5 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 25 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | 50 | | 1 | 1.0000 | Exact | _ | ificant Effect | | | | |
| | 100 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| Data Summary | | | | | | | | | | | |
| C-% Co | ontrol Type | NR | R | NR + R | Prop NR | Prop R | %Effect | | | | |
| | b Water Cont | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 6.25 | | 9 | 1 | 10 | 0.9 | 0.1 | 10.0% | | | | |
| 12.5 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 25 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 50 | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 50 | | 10 | | 10 | | 0 | 0.0% | | | | |



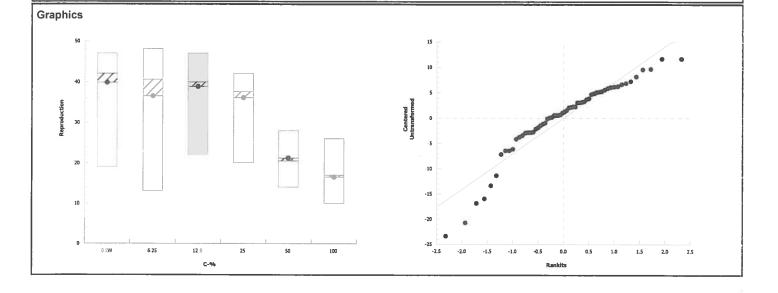
Report Date: Test Code: 23 Apr-15 17:10 (p 1 of 1)

62230 | 06-8452-4915

58.5%

30.1%

| | | | | | | | | 1000 | ooue. | | 02200 0 | 0-0432-431 |
|-----------------------------|-----------------|-----------|--------------|-------------|----------|--------|-----------|-----------|--------------|-----------------|-----------|------------|
| Ceriodaphnia | Survival and Ro | eprodu | ction Test | . = | | | | | | | Paci | fic EcoRis |
| Analysis ID: | 10-7567-6941 | | | production | | | | | IS Version | | .8.7 | |
| Analyzed: | 23 Apr-15 17:0 | 9 4 | Analysis: No | nparametric | -Control | I VS I | reatments | Offic | ial Result | s: Yes | | |
| Data Transform | n | Zeta | Alt Hyp | Trials | Seed | | | PMSD | NOEL | LOEL | TOEL | TU |
| Untransformed | | NA | C > T | NA | NA | | | 19.6% | 25 | 50 | 35.36 | 4 |
| Steel Many-On | e Rank Sum Te | est | | | | | | | | | | |
| Control | vs C-% | | Test Stat | Critical | Ties | DF | P-Value | P-Type | Decision | η(α:5%) | | |
| Lab Water Conf | trol 6.25 | | 101 | 75 | 4 | 18 | 0.7280 | Asymp | Non-Sigr | nificant Effect | | |
| | 12.5 | | 97 | 75 | 6 | 18 | 0.5980 | Asymp | Non-Sigr | nificant Effect | | |
| | 25 | | 79.5 | 75 | 4 | 18 | 0.0977 | Asymp | Non-Sigr | nificant Effect | | |
| | 50* | | 61.5 | 75 | 1 | 18 | 0.0023 | Asymp | Significa | nt Effect | | |
| | 100* | | 57 | 75 | 0 | 18 | 0.0007 | Asymp | Significa | nt Effect | | |
| ANOVA Table | | | | | | | | | | | | = |
| Source | Sum Squa | ares | Mean Squ | ıare | DF | | F Stat | P-Value | Decision | n(α:5%) | | |
| Between | 4989.933 | | 997.9867 | | 5 | | 17.1 | <0.0001 | Significa | nt Effect | | |
| Error | 3143 | | 58.2037 | | 54 | | | | _ | | | |
| Total | 8132.933 | | | | 59 | | | | | | | |
| Distributional [*] | Tests | | | | | | | | | | | |
| Attribute | Test | _ | | Test Stat | Critic | al | P-Value | Decision | (a:1%) | | | |
| Variances | Bartlett E | quality c | f Variance | 10.3 | 15.1 | | 0.0661 | Equal Var | iances | | | |
| Distribution | Shapiro-V | Vilk W N | lormality | 0.907 | 0.946 | | 0.0002 | Non-norm | al Distribut | ion | | |
| Reproduction | Summary | | | | | | | | | | | |
| C-% (| Control Type | Count | Mean | 95% LCL | 95% L | JCL | Median | Min | Max | Std Err | CV% | %Effect |
| 0 Ι | Lab Water Conti | r 10 | 39.8 | 34 | 45.6 | | 42 | 19 | 47 | 2.57 | 20.4% | 0.0% |
| 6.25 | | 10 | 36.4 | 27.8 | 45 | | 40.5 | 13 | 48 | 3.8 | 33.0% | 8.54% |
| 12.5 | | 10 | 38.9 | 33.8 | 44 | | 40 | 22 | 47 | 2.23 | 18.2% | 2.26% |
| 25 | | 10 | 36 | 31.5 | 40.5 | | 37.5 | 20 | 42 | 1.97 | 17.3% | 9.55% |
| 50 | | 10 | 21.2 | 17.6 | 24.8 | | 20.5 | 14 | 28 | 1.6 | 23.9% | 46.7% |
| | | | | | | | | | | | | |



20.1

17

10

26

1.57

100

10

16.5

12.9

Report Date: **Test Code:**

23 Apr-15 17:10 (p 1 of 1)

62230 | 06-8452-4915

Ceriodaphnia Survival and Reproduction Test

Pacific EcoRisk

Analysis ID: Analyzed:

04-5104-7926 23 Apr-15 17:09 Endpoint: Analysis:

Reproduction

Linear Interpolation (ICPIN)

CETIS Version:

CETISv1.8.7

Official Results: Yes

| | • | ation Options | | | | | | |
|---------|----------|---------------|---------|-------|-----------|------------|-------------------------|-------------|
| X Trans | sform | Y Transform | Seed | t | Resamples | Exp 95% CL | Method | |
| Linear | | Linear | 1086 | 802 | 200 | Yes | Two-Point Interpolation | |
| Point E | stimates | 3 | | | | | | |
| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL | | |
| IC5 | 5.78 | 1.65 | 27.9 | 17.29 | 3.589 | 60.48 | | |
| IC10 | 25.3 | 3.31 | 30.7 | 3.952 | 3.254 | 30.24 | | |
| IC15 | 28.7 | 4.96 | 33.7 | 3.489 | 2.964 | 20.16 | | |
| IC20 | 32 | 20.4 | 37.3 | 3.122 | 2.678 | 4.895 | | |
| IC25 | 35.4 | 26.9 | 40.8 | 2.826 | 2.452 | 3.717 | | |
| IC40 | 45.5 | 39.7 | 58.7 | 2.199 | 1.703 | 2.519 | | |
| IC50 | 63.8 | 45.9 | 94.5 | 1.567 | 1.058 | 2.177 | | |

| Reprodu | production Summary | | | Calculated Variate | | | | | | | | |
|---------|---------------------|-------|------|--------------------|-----|---------|---------|-------|---------|--|--|--|
| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect | | | |
| 0 | Lab Water Contr | 10 | 39.8 | 19 | 47 | 2.57 | 8.12 | 20.4% | 0.0% | | | |
| 6.25 | | 10 | 36.4 | 13 | 48 | 3.8 | 12 | 33.0% | 8.54% | | | |
| 12.5 | | 10 | 38.9 | 22 | 47 | 2.23 | 7.06 | 18.2% | 2.26% | | | |
| 25 | | 10 | 36 | 20 | 42 | 1.97 | 6.24 | 17.3% | 9.55% | | | |
| 50 | | 10 | 21.2 | 14 | 28 | 1.6 | 5.07 | 23.9% | 46.7% | | | |
| 100 | | 10 | 16.5 | 10 | 26 | 1.57 | 4.97 | 30.1% | 58.5% | | | |

Graphics C-96

Analyst: 25 QA: pur

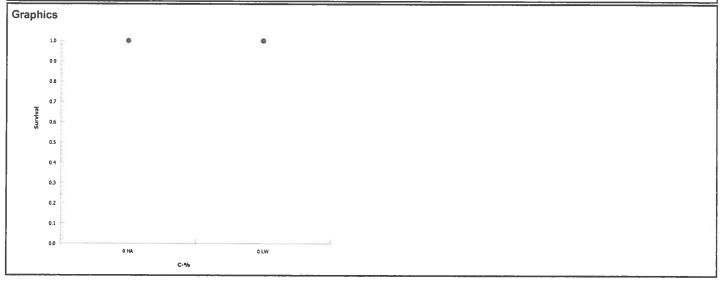
000-034-187-1

CETIS™ v1.8.7.16

Report Date: Test Code: 24 Apr-15 16:55 (p 1 of 1)

62230 | 06-8452-4915

| Pacific EcoRis |
|----------------|
| |
| CETISv1.8.7 |
| Yes |
| t |
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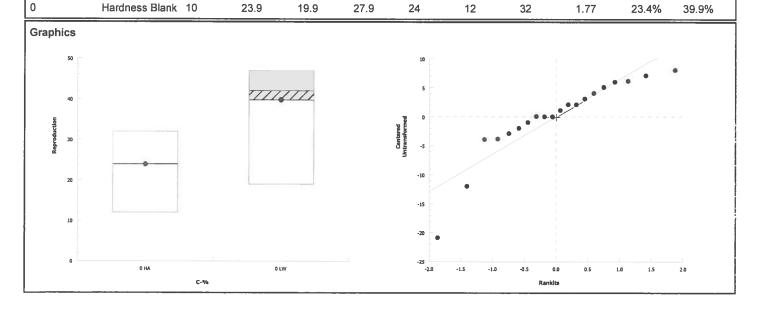
Analyst: Analyst: QA:

Report Date:

24 Apr-15 16:55 (p 1 of 1)

Test Code: 62230 | 06-8452-4915

| Ceriodaphnia S | Survival and Repro | duction Test | | | | | | | Paci | fic EcoRisk |
|---------------------------|---------------------------------|--------------|----------------------------|-----------|---------|--------------|---------------|-------------|-------|-------------|
| Analysis ID: Analyzed: | 00-3170-1734 24 Apr-15 16:55 | | production nparametric- | Two Sampl | e | | IS Version: | | 1.8.7 | |
| Data Transforn | n Zet | ta Alt Hyp | Trials | Seed | | PMSD | Test Res | ult | | |
| Untransformed | NA | C>T | NA | NA | | 13.6% | Fails repr | oduction | | |
| Wilcoxon Rank | Sum Two-Sample | Test | | | | | | | | |
| Control | vs Control | Test Stat | Critical | Ties DF | P-Value | P-Type | Decision | (a:5%) | | |
| Lab Water Cont | trol Hardness Blai | nk 64 | NA | 0 18 | 0.0005 | Exact | Significar | nt Effect | | |
| ANOVA Table | | | | | | | | | | |
| Source | Sum Squares | Mean Sq | uare | DF | F Stat | P-Value | Decision | (a:5%). | | |
| Between | 1264.05 | 1264.05 | | 1 | 26 | <0.0001 | Significar | t Effect | | |
| Error | 874.5 | 48.58333 | | 18 | | | | | | |
| Total | 2138.55 | | | 19 | | | | | | |
| Distributional 1 | Tests | | | | | | | | | ··· |
| Attribute | Test | | Test Stat | Critical | P-Value | Decision | (α:1%) | | | |
| Variances | Variance Ratio | o F | 2.11 | 6.54 | 0.2803 | Equal Var | iances | | | |
| Distribution | Shapiro-Wilk \ | // Normality | 0.852 | 0.866 | 0.0057 | Non-norm | al Distributi | on | | |
| Reproduction S | Summary | | | | | _ | | | | |
| C-% | Control Type Co | unt Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect |
| 0 L | ab Water Contr 10 | 39.8 | 34 | 45.6 | 42 | 19 | 47 | 2.57 | 20.4% | 0.0% |
| 0 1 | tendered BL 1 40 | 00.0 | 40.0 | | | | | | | |



Analyst: 18. Sor DGA: W

Appendix H

Test Data and Summary of Statistics for the Evaluation of the Chronic Toxicity of Lehigh ITS Effluent to Ceriodaphnia dubia

CETIS Summary Report

Report Date: Test Code:

0

0

1

23 Apr-15 16:57 (p 1 of 2) 62231 | 11-3663-8196

| | | | | | | Т | est Code: | | 62231 1 | 1-3663-819 |
|----------------|-----------------|----------------|----------------|----------------|---------|-------|-----------|---------------------|-------------|------------|
| Ceriodaphnia | Survival and Re | production Tes | | | | | | | Paci | fic EcoRis |
| Batch ID: | 14-2313-6191 | Test Type | : Reproduction | -Survival (7d) | | F | Analyst: | Drew Gantner | | |
| Start Date: | 14 Apr-15 14:30 | Protocol: | EPA-821-R-0 | 2-013 (2002) | | E | Diluent: | Laboratory Wa | ter | |
| Ending Date: | 20 Apr-15 15:00 | Species: | Ceriodaphnia | dubia | | Е | Brine: | Not Applicable | | |
| Duration: | 6d 1h | Source: | In-House Cult | ure | | A | Age: | 1 | | |
| Sample ID: | 05-1752-1178 | Code: | ITSEffluent | | | (| Client: | Lehigh Perman | ente | |
| Sample Date: | 13 Apr-15 09:40 | Material: | Influent | | | F | Project: | 24035 | | |
| Receive Date: | 13 Apr-15 11:40 | Source: | Lehigh Perma | inente | | | | | | |
| Sample Age: | 29h (13.3 °C) | Station: | ITS Effluent | | | | | | | |
| Comparison S | Summary | | | · | | | | | | |
| Analysis ID | Endpoint | NOE | L LOEL | TOEL | PMSD | TU | Meth | | | |
| 15-2457-6691 | Reproduction | 50 | 100 | 70.71 | 8.68% | 2 | Dunr | nett Multiple Con | nparison Te | st |
| 20-4958-4020 | Survival | 100 | >100 | NA | NA | 1 | Fishe | er Exact/Bonferro | oni-Holm Te | est |
| Point Estimate | Summary | | | | | | | | | |
| Analysis ID | Endpoint | Leve | el % | 95% LCL | 95% UCL | TU | Meth | od | | |
| 15-0471-8266 | Reproduction | IC5 | 30 | 10.8 | 51.1 | 3.338 | Linea | ar Interpolation (I | ICPIN) | |
| | | IC10 | 48.8 | 30.2 | 64.5 | 2.049 | | | | |
| | | IC18 | 64.4 | 49.3 | 77.2 | 1.552 | | | | |
| | | IC20 | 79.8 | 65.8 | 93.5 | 1.252 | | | | |
| | | IC25 | 95.3 | 79.7 | N/A | 1.05 | | | | |
| | | IC40 | >100 | N/A | N/A | <1 | | | | |
| | | IC50 | >100 | N/A | N/A | <1 | | | | 77 |
| Reproduction | Summary | | | | | | | | | |
| | Control Type | Count Mea | | 95% UCL | Min | Max | Std E | rr Std Dev | CV% | %Effect |
| | Lab Water Contr | | | 42.3 | 33 | 43 | 1.14 | 3.59 | 9.05% | 0.0% |
| 6.25 | | 10 41.7 | | 43.9 | 37 | 48 | 0.95 | | 7.24% | -5.04% |
| 12.5 | | 10 40.1 | 37.4 | 42.8 | 34 | 46 | 1.2 | 3.78 | 9.44% | -1.01% |
| 25 | | 10 39.2 | | 41.3 | 34 | 45 | 0.929 | 2.94 | 7.49% | 1.26% |
| 50 | | 10 36.5 | | 38.7 | 32 | 42 | 0.992 | 2 3.14 | 8.59% | 8.06% |
| 100 | | 10 29.9 | 27.3 | 32.5 | 23 | 34 | 1.15 | 3.63 | 12.2% | 24.7% |
| Survival Sumn | nary | | | | | | | | | |
| | Control Type | Count Mea | | | Min | Max | Std E | | CV% | %Effec |
| | Lab Water Contr | | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 6.25 | | 10 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 12.5 | | 10 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 25 | | 10 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 50 | | 10 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0.0% | 0.0% |
| 400 | | 40 4 | 4 | | | | | _ | | |



0.0%

0.0%

100

10

1

1

Report Date: Test Code: 23 Apr-15 16:57 (p 2 of 2)

62231 | 11-3663-8196

| | | | | | | | Tes | t Code: | | 62231 1 | 1-3663-819 |
|------------|----------------------|----------|---------|-------|-------|-------|-------|---------|-------|-----------|-------------|
| Ceriodap | hnia Survival and Re | producti | on Test | | | | | | | Paci | fic EcoRisk |
| Reproduc | ction Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 42 | 43 | 33 | 43 | 42 | 35 | 38 | 38 | 40 | 43 |
| 6.25 | | 48 | 41 | 37 | 41 | 41 | 44 | 40 | 39 | 43 | 43 |
| 12.5 | | 41 | 39 | 38 | 37 | 46 | 41 | 34 | 44 | 44 | 37 |
| 25 | | 45 | 39 | 40 | 39 | 34 | 37 | 37 | 41 | 39 | 41 |
| 50 | | 36 | 36 | 36 | 42 | 35 | 38 | 32 | 36 | 41 | 33 |
| 100 | | 28 | 28 | 29 | 34 | 30 | 32 | 27 | 34 | 23 | 34 |
| Survival I | Detail | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 6.25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 12.5 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 25 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 50 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 100 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Survival I | Binomials | | | | | | | | | | |
| C-% | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 6.25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 12.5 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 25 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 = | 1/1 | 1/1 |
| 50 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 100 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| | | | | | | | | | | | |

Report Date: Test Code: 23 Apr-15 16:52 (p 1 of 1)

62231 | 11-3663-8196

| | | | | | | | | Test | Code: | | 62231 1 | 1-3663-8196 |
|----------------------|---|--------------------------------|--------|----------------------------|------------|----------------|--------------|----------------|----------------------------|---------------|-------------|-------------|
| Ceriodap | hnia S | Survival and Re | eprodu | uction Test | | | | | | | Pacif | ic EcoRisk |
| Analysis Analyzed | | 20-4958-4020 23 Apr-15 16:5 | 2 | Endpoint: S Analysis: S | | ntingency Tabl | es | | S Version: ial Results: | CETISV Yes | 1.8.7 | |
| Data Trar | nsform | 1 | Zeta | Alt Hyp | Trials | Seed | | | NOEL | LOEL | TOEL | TU |
| Untransfo | rmed | | | C > T | NA | NA | | | 100 | >100 | NA | 1 |
| Fisher Ex | cact/B | onferroni-Holm | ı Test | | | | | | | | | 33 |
| Control | ٧ | s C-% | | Test St | at P-Value | e P-Type | Decision | ı(α:5%) | | | | |
| _ab Wate | r Cont | rol 6.25 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | | 12.5 | | 1 | 1.0000 | Exact | | ificant Effect | | | | |
| | | 25 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | | 50 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| | | 100 | | 1 | 1.0000 | Exact | Non-Sign | ificant Effect | | | | |
| Data Sum | nmary | | | | | | | | | | | |
| 2-% | C | Control Type | NR | R | NR + R | Prop NR | Prop R | %Effect | | | | |
|) | L | ab Water Cont | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 3.25 | | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 12.5 | | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 25 | | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 50 | | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| 100 | | | 10 | 0 | 10 | 1 | 0 | 0.0% | | | | |
| Graphics | | | | | | · | <u>: : :</u> | - | | | | |
| 1.0 | _ 0 | • | | • | | | | | | | | |
| 0.9 | i. | | | | | | | | | | | |
| 0.9 | - | | | | | | | | | | | |
| 8.0 | F | | | | | | | | | | | |
| 0.7 | F | | | | | | | | | | | |
| Survival 9.0 | Ė. | | | | | | | | | | | |
| | ما ما د اد | | | | | | | | | | | |
| 0.5 | | | | | | | | | | | | |
| 0.4 | - | | | | | | | | | | | |
| 0.3 | | | | | | | | | | | | |
| 0.2 | | | | | | | | | | | | |
| | | | | | | | | | | | | |

0.1

6.25

12.5

Report Date:

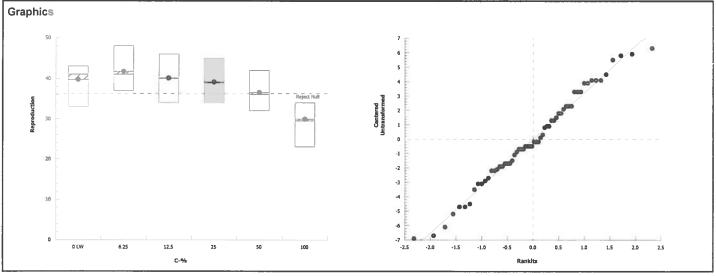
23 Apr-15 16:52 (p 1 of 1)

Test Code: 62231 | 11-3663-8196

| | | | | | | | | | 1621 | Code. | | 02231 1 | 1-3003-019 |
|-----------------|------|-------------------------|---------|-----------|---------------------------|----------|------|---------|---------|--------------|---------------|-----------|-------------|
| Ceriodaphnia S | urvi | ival and Repro | duction | Test | | | | | | | | Paci | fic EcoRisk |
| | | 457-6691 pr-15 16:52 | Endp | | production rametric-Co | ntrol vs | Trea | tments | | S Version | | 1.8.7 | |
| Data Transform | | Zet | а | Alt Hyp | Trials | Seed | | | PMSD | NOEL | LOEL | TOEL | TU |
| Untransformed | | NA | | C > T | NA | NA | | | 8.68% | 50 | 100 | 70.71 | 2 |
| Dunnett Multipl | e Co | omparison Tes | t | | | | | | | ······ | | · | |
| Control | vs | C-% | | Test Stat | Critical | MSD | DF | P-Value | P-Type | Decisio | n(α:5%) | | |
| Lab Water Contr | ol | 6.25 | | -1.33 | 2.29 | 3.45 | 18 | 0.9943 | CDF | Non-Sigi | nificant Effe | ct | |
| | | 12.5 | | -0.266 | 2.29 | 3.45 | 18 | 0.9004 | CDF | Non-Sigi | nificant Effe | ct | |
| | | 25 | | 0.332 | 2.29 | 3.45 | 18 | 0.7167 | CDF | Non-Sigi | nificant Effe | ct | |
| | | 50 | | 2.13 | 2.29 | 3.45 | 18 | 0.0708 | CDF | Non-Sigi | nificant Effe | ct | |
| | | 100* | | 6.51 | 2.29 | 3.45 | 18 | <0.0001 | CDF | Significa | nt Effect | | |
| ANOVA Table | | | | | | | | | - | <i>22</i> 02 | | | |
| Source | | Sum Squares | | Mean Sq | uare | DF | | F Stat | P-Value | Decision | η(α:5%) | | |
| Between | | 901.55 | | 180.31 | | 5 | | 15.9 | <0.0001 | Significa | nt Effect | | |
| Error | | 612.1 | | 11.33519 | | 54 | | | | | | | |
| Total | | 1513.65 | | | | 59 | | | | | | | |

| Distributional Tests | • | | | | |
|----------------------|-------------------------------|-----------|----------|---------|---------------------|
| Attribute | Test | Test Stat | Critical | P-Value | Decision(a:1%) |
| Variances | Bartlett Equality of Variance | 1.01 | 15.1 | 0.9621 | Equal Variances |
| Distribution | Shapiro-Wilk W Normality | 0.983 | 0.946 | 0.5881 | Normal Distribution |

| Reproduc | Reproduction Summary | | | | | | | | | | | | | |
|----------|----------------------|-------|------|---------|---------|--------|-----|-----|---------|-------|---------|--|--|--|
| C-% | Control Type | Count | Mean | 95% LCL | 95% UCL | Median | Min | Max | Std Err | CV% | %Effect | | | |
| 0 | Lab Water Contr | 10 | 39.7 | 37.1 | 42.3 | 41 | 33 | 43 | 1.14 | 9.05% | 0.0% | | | |
| 6.25 | | 10 | 41.7 | 39.5 | 43.9 | 41 | 37 | 48 | 0.955 | 7.24% | -5.04% | | | |
| 12.5 | | 10 | 40.1 | 37.4 | 42.8 | 40 | 34 | 46 | 1.2 | 9.44% | -1.01% | | | |
| 25 | | 10 | 39.2 | 37.1 | 41.3 | 39 | 34 | 45 | 0.929 | 7.49% | 1.26% | | | |
| 50 | | 10 | 36.5 | 34.3 | 38.7 | 36 | 32 | 42 | 0.992 | 8.59% | 8.06% | | | |
| 100 | | 10 | 29.9 | 27.3 | 32.5 | 29.5 | 23 | 34 | 1.15 | 12.2% | 24.7% | | | |



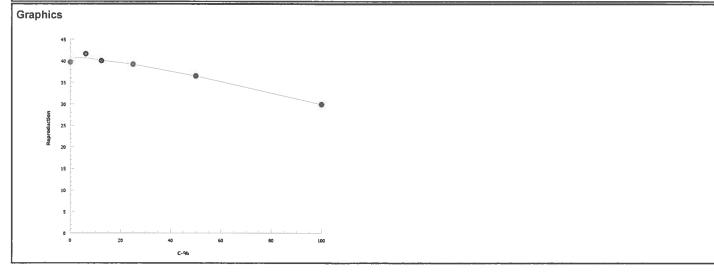
Report Date: Test Code: 23 Apr-15 16:52 (p 1 of 1)

62231 | 11-3663-8196

| Ceriodaphnia | Survival and Repro | duction Test | | | | Pacific EcoRisk |
|--------------|--------------------|--------------|------------------------------|-------------------|-------------|-----------------|
| Analysis ID: | 15-0471-8266 | Endpoint: | Reproduction | CETIS Version: | CETISv1.8.7 | |
| Analyzed: | 23 Apr-15 16:52 | Analysis: | Linear Interpolation (ICPIN) | Official Results: | Yes | |

| Linear | Interpola | tion Options | | | | | | - |
|---------|-----------|--------------|---------|-------|-----------|------------|-------------------------|---|
| X Trans | sform | Y Transform | Seed | d | Resamples | Exp 95% CL | Method | |
| Linear | | Linear | 1965 | 100 | 200 | Yes | Two-Point Interpolation | |
| Point E | stimates | | | | | | | |
| Level | % | 95% LCL | 95% UCL | TU | 95% LCL | 95% UCL | | |
| IC5 | 30 | 10.8 | 51.1 | 3.338 | 1.956 | 9.225 | | |
| IC10 | 48.8 | 30.2 | 64.5 | 2.049 | 1.55 | 3.316 | | |
| IC15 | 64.4 | 49.3 | 77.2 | 1.552 | 1.295 | 2.029 | | |
| IC20 | 79.8 | 65.8 | 93.5 | 1.252 | 1.069 | 1.521 | | |
| IC25 | 95.3 | 79.7 | N/A | 1.05 | NA | 1.255 | | |
| IC40 | >100 | N/A | N/A | <1 | NA | NA | | |
| IC50 | >100 | N/A | N/A | <1 | NA | NA | | |

| Reprodu | uction Summary | | | | | alculated Va | riate | | | |
|---------|-----------------|-------|------|-----|-----|--------------|---------|-------|---------|--|
| C-% | Control Type | Count | Mean | Min | Max | Std Err | Std Dev | CV% | %Effect | |
| 0 | Lab Water Contr | 10 | 39.7 | 33 | 43 | 1.14 | 3.59 | 9.05% | 0.0% | |
| 6.25 | | 10 | 41.7 | 37 | 48 | 0.955 | 3.02 | 7.24% | -5.04% | |
| 12.5 | | 10 | 40.1 | 34 | 46 | 1.2 | 3.78 | 9.44% | -1.01% | |
| 25 | | 10 | 39.2 | 34 | 45 | 0.929 | 2.94 | 7.49% | 1.26% | |
| 50 | | 10 | 36.5 | 32 | 42 | 0.992 | 3.14 | 8.59% | 8.06% | |
| 100 | | 10 | 29.9 | 23 | 34 | 1.15 | 3.63 | 12.2% | 24.7% | |



| (| Client: | | I | Lehigh Pe | rmanent | e | | M | aterial: | | IT | S Efflue | ent | | | Tes | st Date: | 4/14 | /15 | |
|-------------------|---------|--------------|----------|-------------|----------|------------------|--------------|-----|----------|----------|--------------|-----------|--------------|--------|------|---------|---------------------|---------------------------|--------------------------------|-----------------------|
| Pro | ect #: | 240 | 035 | | Test ID: | 622 | 31 | R | landomi | zation: | | 10.6 | .9 | | | Control | Water: | Mo | odified EPAMH | |
| | Day | рН | | D.O. | 011 | Cond. (µS/cm) | Temp (°C) | | | | | vival / R | | | ., 1 | , | | | SIGN-OFF | |
| | 0 | New B, 20 | Old | New S, S | Old | 320 | 25.2 | A 0 | В О | C O | D | E O | Б О | G O | Н | 0 |) | Date:4/14/ | SNew WQ:A | |
| | 1 | 7 (70 | P0.8 | 8.9 | 8.5 | | 25.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | $\hat{\mathcal{O}}$ | Date: #(57) | New WQ: RG | Counts Y 1 |
| | 2 | 8.21 | 8.06 | | 7.6 | | 24.9 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | <u>)</u> ල | Date: 4/16 | Old WQ: SVV | Counts Time 550 |
| lo | 3 | 838 | 8,19 | 8.1 | 8.1 | 318 | 25.1 | 7 | 0 | 0 | 5 | 8 | 5 | 5 | 5 | 5 | 6 | Date: 4/17/1 | 5 New WQ: CL Old WQ: NB | Counts |
| Lab Water Control | 4 | 798 | 7.98 | | 7.8 | 200 | 24.% | 0 | 8 | 3 | 6 | 0 | 0 | 6 | 0 | 0 | 0 | Date: 4-18 | Old WQ: MJ | Counts The |
| ıb Wate | 5 | 8.02 | 7.78 | 8.2 | 8.5 | 325 | 25.0 | 14 | 14 | 12 | 15 | 14 | 16 | 12 | 11 | 12 | 13 | Date: 4/9/ Sol'n Prep: | S New WQ: 1950 Old WQ: (5) | Counts 250 |
| ت | 6 | نب | 792 | | 7.5 | 343 | 24.8 | 21 | 2) | 18 | 23 | 20 | 14 | 21 | 22 | 23 | 24 | Date: 4201 Sol'n Prep: | New WQ: Old WQ: | Counts CTD Time: ISCC |
| | 7 | | | | | | | | | | | | | | | | | Date: Sol'n Prep: | New WQ: Old WQ: | Counts: |
| | 8 | | | | | | | | | 33 | 43 | | | | | | | Date: | Old WQ: | Counts: Time: |
| | | | | | | | Total= | 42 | 43 | 33 | 29 | 42 | 35 | 38 | 38 | 40 | 43 | Mean Neonates/Fe | emale = 39. | 7 |
| | Day | New P | H Old | D. New | .O. | Cond. (µS/cm) | | A | В | C | Surviva D | l / Repro | duction F | G | Н | 1 | J | ! | Sample 1D | |
| 313131313 | 0 | 74.06 | | 8.7 | | 397 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 38291 | |
| | 1 | 7.90 | 801 | 8.7 | 8.2 | 410 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ೨ | | 38791 | |
| | 2 | 8.13 | 7.96 | 8.5 | 8.0 | 400 | | 0 | O | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | l l | 38337 | |
| | 3 | 8.25 | 8.17 | 0.8 | 8,0 | 398 | | 7_ | 5 | 5 | 6 | 5 | 5 | 6 | 6 | 6 | 6 | | 38337 | |
| .25% | 4 | 7.97 | 8.02 | 8.3 | 7.5 | 392 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | 38358 | |
| 6.2 | 5 | 8,02 | 7.89 | 8.2 | 7.9 | 399 | | 15 | 14 | 19 | 13 | 11 | 15 | 13 | 13 | 15 | 15 | | 38 358 | |
| | 6 | | 7.92 | _ | 7.7 | 423 | | 26 | 22 | 20 | 22 | 25 | 24 | 21 | 20 | 22 | 22 | | * | |
| | 7 | | | | | | | | | | | | | | | | | | ****************************** | |
| | 8 | | | | | | | | | <u> </u> | | | | | 10.0 | | 1.6 | | | |
| | | | | | | | Total= | 148 | 41 | 37 | 41 | 41 | 44 | 40 | 39 | 43 | 43 | Mean Neonates/Fe | emale = 41. | / |

| C | lient: | | I | ehigh Pe | rmanent | e | | М | aterial: | | IT | S Efflue | ent | | | Tes | st Date: | 4/14/15 |
|-------|--------|------|------|----------|----------|---------|--------|-----|----------|----|---------|------------|---------|----|----|---------|----------|---|
| Proj | ect #: | 240 |)35 | | Test ID: | 6223 | 31 | _ | | | | | | | | Control | Water: | Modified EPAMH |
| | Day | pН | | D.O. | | Cond. | Temp | | | | | vival / R | | | | | | SIGN-OFF |
| | | New | Old | New | Old | (μS/cm) | (°C) | Α | В | С | D | Е | F | G | Н | l | J | 388888888888888888888888888888888888888 |
| | 0 | 7.99 | | 7.8 | | 470 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 7.94 | 803 | 8.2 | 0.8 | 476 | | Ð | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | |
| | 2 | 8.10 | 8.00 | 8.2 | 8.0 | 473 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | | 8.24 | | | 469 | | r) | 0 | O | 7 | 6 | 6 | 4 | 8 | 7 | 6 | |
| 12.5% | 4 | | 8.05 | | 7,6 | 465 | | 0 | 5 | 6 | 11 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 12. | 5 | 8,09 | 8.01 | 8.0 | | | | 16 | 14 | 15 | 1 | 18 | 14 | 11 | 15 | 14 | 12 | |
| | 6 | 1 | 8.00 | | 7.8 | 509 | | 20 | 20 | 17 | 18 | 22 | 21 | 19 | 21 | 73 | 19 | |
| | 7 | | | | | | | | | | | | | | | - | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 41 | 39 | 38 | 37 | 46 | 41 | 34 | 44 | 44 | 37 | Mean Neonates/Female = 40. |
| | Day | | Н | | .O. | Cond. | 000000 | | | | Surviva | l / Reprod | duction | | | | | |
| | | New | Old | New | Old | (μS/cm) | | A | В | С | D | E | F | G | H | 1 | J | |
| | 0 | 7.92 | | 7.6 | | 603 | | 0 | 0 | 0 | 0 | C | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 7.91 | 808 | 7.7 | 0.9 | 615 | | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | |
| | 2 | 8.09 | 8.06 | 8.0 | 8.0 | 604 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 8.07 | 8,29 | 81 | 8,0 | 594 | | 10 | 6 | 0 | 5 | 0 | 6 | 4 | 7 | 6 | 7 | |
| 25% | 4 | 8.10 | 8.07 | 8.1 | 7.6 | 589 | | 0 | 0 | 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 2 | 5 | 8.18 | 8.07 | 7,8 | 8.1 | 599 | | 17 | 14 | 13 | 15 | 13 | 14 | 13 | 14 | 13 | 13 | |
| | 6 | | 8.01 | | 7.9 | 638 | | 22 | 19 | 20 | 19 | 15 | 17 | 20 | 20 | 20 | 21 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 145 | 39 | 40 | 39 | 34 | 37 | 37 | 41 | 39 | 41 | Mean Neonates/Female = 39.2 |

| | | | | SII | of t- Tell | m Chro | inc 3-1 |)I OOU | Certo | ишрпп | iu uni | nu Su | ii viva | ICK | cpi ou | uctioi | ii icst | I / |
|------|---------|------|---|----------|------------|------------------|---------|--------|----------|-------|--------------|----------|--------------|------|--------|---------|----------|-----------------------------|
| | Client: | | I | ehigh Pe | rmanent | e | | M | aterial: | | ITS | S Efflue | ent | | | Tes | st Date: | 4/14/15 |
| Proj | ect #: | 240 | 035 | | Test ID: | 622 | 31 | | | | | | | 0.00 | | Control | Water: | Modified EPAMH |
| | Day | рН | | D.O. | | Cond. | Temp | | | | | | eproduct | | | | | SIGN-OFF |
| | | New | Old | New | Old | (µS/cm) | (°C) | Α | В | С | D | Е | F | G | Н | ı | J | |
| | 0 . | 7.87 | | 6.7 | | 849 | | 0 | O | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 7.87 | 8-34 | 7.6 | 79 | 861 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | ı | 8.16 | 6.7 | 8.0 | 852 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | 794 | 8,40 | 7.1 | 8:1 | 851 | | 5 | 0 | 5 | 7 | 4 | 7 | 5 | 6 | 7 | 4 | |
| 5000 | 4 | 8.17 | 8.19 | 7.6 | 7.6 | 838 | | (| 8 | 0 | 0 | 0 | 0. | ٥ | 9 | 1 | 0 | |
| , | 5 | 8.31 | 8.15 | 7.5 | 7.8 | 846 | | 12 | 13 | 11 | 13 | 13 | 12 | 12 | 13 | 15 | 13 | |
| | 6 | _ | 8.08 | | 7.7 | 895 | | 18 | 15 | 20 | રત | 18 | 19 | 15 | 17 | 18 | 16 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | | | | | | | | | | | | l | | | | |
| | | | | | | | Total= | 36 | 36 | 36 | 42 | | 38 | 32 | 36 | 41 | 33 | Mean Neonates/Female = 36.5 |
| | Day | New | Old | D New | .O. | Cond. (µS/cm) | 1888888 | A | В | С | Surviva D | / Repro | duction F | G | Н | 1 | J | |
| | 0 . | _ | Olu | | Old III | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | Ľ | 7.85 | | 6.0 | | 1310 | | | | | | | | - | | - | 0 | |
| | 1 | 7.83 | 8.31 | 5.3 | 7.8 | 1310 | | D | 8 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | |
| | 2 | 8.22 | 8.30 | 7.5 | 7.8 | 1305 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 28 | 3 | 7.79 | 8,44 | 5.7 | 8,1 | 1300 | | 5 | 0 | 0 | 4 | 3 | 6 | 0 | 6 | 5 | 7 | |
| %001 | 4 | 8.20 | 8.31 | 6.9 | 7.6 | 1286 | | 0 | 6 | 3 | 0 | 0 | 6 | 4 | 0 | 3 | 0 | |
| = | 5 | 8.36 | 8.17 | 7.6 | 8.0 | 129) | | 10 | 8 | 12 | 11 | 10 | 12 | 8 | 11 | 0 | 12 | |
| | 6 | _ | 8.29 | | 7.7 | 1342 | | 13 | 14 | 14 | 19 | 17 | 14 | 15 | 17 | 15 | 15 | |
| | 7 | | | | | | | | | | | | | | | | | |
| | 8 | | 0 | | | | | | | | | | | | | | | |
| | | | | | | | Total= | 28 | 28 | 29 | 34 | 30 | 32 | 27 | 34 | 23 | 34 | Mean Neonates/Female = 29.9 |

Appendix I

Test Data and Summary of Statistics for the Reference Toxicant Evaluation of the *Ceriodaphnia dubia*

Report Date: Test Code: 29 Apr-15 16:35 (p 1 of 2) 62232 | 07-4287-8382

Ceriodaphnia Survival and Reproduction Test Pacific EcoRisk 08-6172-4656 Batch ID: Test Type: Reproduction-Survival (7d) Analyst: Padrick Anderson EPA-821-R-02-013 (2002) Start Date: 14 Apr-15 17:45 Diluent: Laboratory Water Protocol: Ending Date: 21 Apr-15 16:00 Species: Ceriodaphnia dubia Brine: Not Applicable **Duration:** 6d 22h Source: In-House Culture Age: 1 15-2137-0698 Pacific Ecorisk Sample ID: Code: NaCl Client: Sample Date: 14 Apr-15 17:45 Material: Sodium chloride 24036 Project: Receive Date: 14 Apr-15 17:45 Source: Reference Toxicant Sample Age: NA (25.2 °C) In House Station: Comparison Summary Analysis ID **Endpoint** NOEL LOEL TOEL **PMSD** TU Method 1000 1500 1225 17.9% **Dunnett Multiple Comparison Test** 07-7133-8569 Reproduction 04-1129-7489 Survival 2000 2500 2236 NA Fisher Exact/Bonferroni-Holm Test **Point Estimate Summary** Analysis ID **Endpoint** Level mg/L 95% LCL 95% UCL TU Method 20-4313-5637 Reproduction IC5 683 275 1010 Linear Interpolation (ICPIN) IC10 890 542 1080 IC15 1030 760 1160 IC20 1110 920 1250 IC25 1180 1030 1360 IC40 1390 1260 1600 IC50 1540 1370 1690 07-8238-6244 Survival EC5 1360 841 1590 Linear Regression (MLE) EC10 1460 989 1680 EC15 1540 1100 1740 EC20 1600 1200 1800 EC25 1660 1280 1850 EC40 1800 1510 2020 EC50 1900 1650 2150 **Reproduction Summary** C-mg/L **Control Type** Count Mean 95% LCL 95% UCL Min Std Dev CV% %Effect Max Std Err Lab Water Contr 10 34.8 37.4 30 42 3.68 10.6% 32.2 1.16 0.0% 500 10 34.6 31.4 37.8 26 39 1.41 4.45 12.9% 0.58% 1000 10 30.4 26.6 34.2 20 36 1.67 5.27 17.4% 12.6% 1500 10 18.3 11.1 25.5 4 30 3.19 10.1 55.1% 47.4% 2000 10 6.7 2.56 10.8 0 17 1.83 5.79 86.5% 80.7% 2500 10 0 0 0 0 0 0 0 100.0% Survival Summary **Control Type** C-mg/L Count Mean 95% LCL 95% UCL Min Max Std Err Std Dev CV% %Effect Lab Water Contr 10 1 1 0 0 0.0% 0.0% 0 500 10 1 1 1 1 1 0 0.0% 0.0% 1000 10 0 0 0.0% 0.0% 1 1 1 1 1 52.7% 1500 0.8 0.498 0 0.133 0.422 20.0% 10 1 1 2000 10 0.6 0.231 0.969 0 1 0.163 0.516 86.1% 40.0% 2500 10 0 0 0 0 0 0 0 100.0%

Analyst: QA: Le

Report Date:

29 Apr-15 16:35 (p 2 of 2) 62232 107-4287-8382

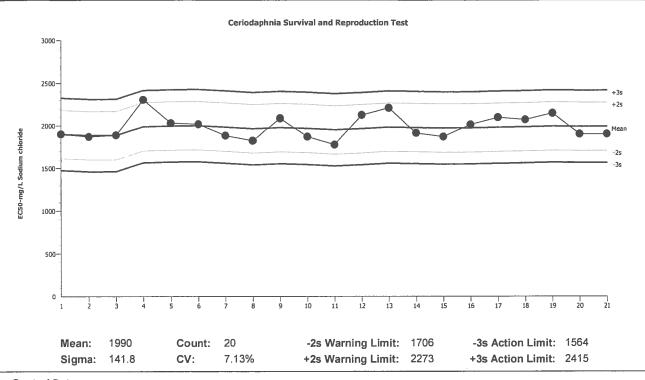
| | | | | | | | Tes | t Code: | | 62232 0 | 7-4287-838 |
|-------------|---------------------|------------|---------|-------|-------|-------|-------|---------|-------|-----------|-------------|
| Ceriodaph | nia Survival and Re | production | on Test | | | | | | | Pacif | fic EcoRisk |
| Reproduct | ion Detail | | | | | | | | | | |
| C-mg/L | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 39 | 36 | 34 | 34 | 42 | 35 | 33 | 35 | 30 | 30 |
| 500 | | 28 | 37 | 39 | 26 | 38 | 35 | 35 | 39 | 33 | 36 |
| 1000 | | 27 | 33 | 35 | 28 | 26 | 34 | 36 | 29 | 20 | 36 |
| 1500 | | 6 | 24 | 4 | 4 | 27 | 30 | 18 | 24 | 19 | 27 |
| 2000 | | 8 | 4 | 17 | 11 | 6 | 0 | 0 | 0 | 12 | 9 |
| 2500 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Survival Do | etail | | | | | | | | | | |
| C-mg/L | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 500 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1000 | | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| 1500 | | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 1 |
| 2000 | | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 |
| 2500 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Survival Bi | nomials | | | | | | | | | | |
| C-mg/L | Control Type | Rep 1 | Rep 2 | Rep 3 | Rep 4 | Rep 5 | Rep 6 | Rep 7 | Rep 8 | Rep 9 | Rep 10 |
| 0 | Lab Water Contr | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 500 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 1000 | | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 1500 | | 1/1 | 1/1 | 0/1 | 0/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 | 1/1 |
| 2000 | | 1/1 | 0/1 | 1/1 | 1/1 | 1/1 | 0/1 | 0/1 | 0/1 | 1/1 | 1/1 |
| 2500 | | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 | 0/1 |

Analyst: 40 QA: Le

000-034-187-1 CETIS™ v1.8.7.16

Report Date: 29 Apr-15 16:35 (1 of 1)

Ceriodaphnia Survival and Reproduction Test Test Type: Reproduction-Survival (7d) Protocol: EPA-821-R-02-013 (2002) Endpoint: Survival Ceriodaphnia dubia (Water Flea) Material: Sodium chloride Source: Reference Toxicant-REF

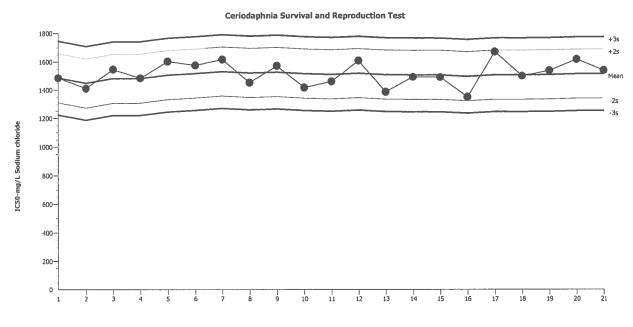


| oint Yea | Month | Day | Time | QC Data | Delta | Sigma | Warning | Action | Test ID | Analysis ID |
|----------|-------|-----|-------|---------|--------|---------|---------|--------|--------------|--------------|
| 201 | Feb | 25 | 14:20 | 1900 | -89.54 | -0.6314 | | | 07-5545-5977 | 09-9790-2734 |
| | | 26 | 17:00 | 1869 | -121.3 | -0.8553 | | | 18-8331-2403 | 20-3499-7643 |
| | | 28 | 13:52 | 1888 | -102.3 | -0.7211 | | | 13-7932-4759 | 07-8720-8021 |
| | Mar | 3 | 13:30 | 2304 | 313.9 | 2.214 | (+) | | 01-6071-4477 | 20-2561-0282 |
| | | 3 | 13:55 | 2031 | 41.47 | 0.2925 | | | 09-0535-3687 | 08-1412-0035 |
| | | 5 | 13:15 | 2019 | 28.9 | 0.2038 | | | 16-1622-9537 | 00-5183-0879 |
| | | 10 | 14:15 | 1882 | -108.2 | -0.7632 | | | 03-8930-9354 | 06-7695-5627 |
| | | 11 | 15:20 | 1823 | -167.2 | -1.179 | | | 16-6394-6805 | 20-2552-1985 |
| | | 12 | 14:00 | 2088 | 97.6 | 0.6883 | | | 05-9267-0456 | 09-9220-2291 |
| 0 | | 17 | 14:00 | 1869 | -121.3 | -0.8553 | | | 10-3243-8385 | 17-2645-3430 |
| 1 | | 19 | 19:00 | 1776 | -214.2 | -1.51 | | | 09-0213-7442 | 15-5008-3697 |
| 2 | | 24 | 14:00 | 2125 | 134.7 | 0.95 | | | 13-7900-5600 | 04-8486-3730 |
| 3 | | 26 | 14:10 | 2209 | 218.5 | 1.541 | | | 05-9397-9045 | 18-9655-5436 |
| 4 | | 31 | 13:10 | 1913 | -77.28 | -0.545 | | | 20-3429-0018 | 10-9627-5291 |
| 5 | Apr | 2 | 15:10 | 1869 | -121.3 | -0.8553 | | | 14-9686-9242 | 05-4805-5078 |
| 6 | | 3 | 14:05 | 2014 | 24.37 | 0.1719 | | | 09-4937-8674 | 08-0017-0789 |
| 7 | | 7 | 13:30 | 2097 | 107 | 0.7547 | | | 19-2834-8148 | 13-5670-4061 |
| 8 | | 8 | 15:10 | 2071 | 81.13 | 0.5722 | | | 12-2892-6165 | 14-0015-2491 |
| 9 | | 9 | 14:28 | 2147 | 156.6 | 1.105 | | | 04-0146-5443 | 16-2546-1272 |
| :0 | | 10 | 4:30 | 1900 | -89.54 | -0.6314 | | | 09-1555-8400 | 09-5417-3888 |
| :1 | | 14 | 17:45 | 1900 | -89.54 | -0.6314 | | | 07-4287-8382 | 07-8238-6244 |

Report Date: 23 April 3 10.00 (1 01 1)

Ceriodaphnia Survival and Reproduction Test

Test Type: Reproduction-Survival (7d) Organism: Ceriodaphnia dubia (Water Flea) Material: Sodium chloride
Protocol: EPA-821-R-02-013 (2002) Endpoint: Reproduction Source: Reference Toxicant-REF



| Mean: | 1513 | Count: | 20 | -2s Warning Limit: | 1339 | -3s Action Limit: | 1252 |
|--------|------|--------|-------|--------------------|------|-------------------|------|
| Sigma: | 86.9 | CV: | 5.74% | +2s Warning Limit: | 1687 | +3s Action Limit: | 1774 |

| oint | Year | Month | Dav | Time | QC Data | Delta | Sigma | Warning | Action | Test ID | Analysis ID |
|------|------|-------|-----|-------|---------|--------|---------|----------|--------|--------------|--------------|
| | 2015 | | 25 | 14:20 | 1485 | -28.06 | -0.3229 | <u> </u> | | 07-5545-5977 | 01-3014-7131 |
| 2 | | | 26 | 17:00 | 1411 | -102.3 | -1.177 | | | 18-8331-2403 | 20-6095-4368 |
| 3 | | | 28 | 13:52 | 1546 | 33.13 | 0.3813 | | | 13-7932-4759 | 08-0684-6316 |
| 4 | | Mar | 3 | 13:30 | 1483 | -29.79 | -0.3428 | | | 01-6071-4477 | 05-9886-8233 |
| 5 | | | 3 | 13:55 | 1602 | 88.85 | 1.022 | | | 09-0535-3687 | 19-8366-2925 |
| 3 | | | 5 | 13:15 | 1575 | 61.74 | 0.7105 | | | 16-1622-9537 | 16-5368-5572 |
| 7 | | | 10 | 14:15 | 1616 | 103 | 1.185 | | | 03-8930-9354 | 08-4782-7608 |
| 3 | | | 11 | 15:20 | 1451 | -62.07 | -0.7142 | | | 16-6394-6805 | 00-3638-1975 |
| 9 | | | 12 | 14:00 | 1571 | 58.21 | 0.6699 | | | 05-9267-0456 | 10-0108-6427 |
| 10 | | | 17 | 14:00 | 1416 | -96.78 | -1.114 | | | 10-3243-8385 | 16-2290-3397 |
| 11 | | | 19 | 19:00 | 1459 | -54.42 | -0.6262 | | | 09-0213-7442 | 18-6072-0224 |
| 12 | | | 24 | 14:00 | 1608 | 94.69 | 1.09 | | | 13-7900-5600 | 15-6482-1664 |
| 13 | | | 26 | 14:10 | 1386 | -126.6 | -1.457 | | | 05-9397-9045 | 06-4391-5894 |
| 14 | | | 31 | 13:10 | 1492 | -21.2 | -0.2439 | | | 20-3429-0018 | 11-5870-3027 |
| 15 | | Apr | 2 | 15:10 | 1490 | -23 | -0.2647 | | | 14-9686-9242 | 03-1418-6078 |
| 16 | | | 3 | 14:05 | 1350 | -162.6 | -1.871 | | | 09-4937-8674 | 12-7898-6855 |
| 17 | | | 7 | 13:30 | 1670 | 156.6 | 1.802 | | | 19-2834-8148 | 05-1356-6075 |
| 18 | | | 8 | 15:10 | 1498 | -14.89 | -0.1714 | | | 12-2892-6165 | 01-4404-4283 |
| 19 | | | 9 | 14:28 | 1537 | 23.76 | 0.2735 | | | 04-0146-5443 | 20-4714-9999 |
| 20 | | | 10 | 4:30 | 1616 | 103.2 | 1.187 | | | 09-1555-8400 | 12-7453-3348 |
| 21 | | | 14 | 17:45 | 1539 | 25.79 | 0.2968 | | | 07-4287-8382 | 20-4313-5637 |

Analyst: QA: Le

000-034-187-1 CETIS™ v1.8.7.16

| (| lient: | | | Rēfer | ence Toxi | icant | | | М | aterial: | | Sodiu | m Chle | oride | | | Tes | st Date: | 4/14/15 |
|-------------------|---------|---------|------|--------|-----------|---|-------------|--------|----|----------|----|---------|-----------|----------|--------|------|-----|----------|---|
| | ject #: | |)36 | 140101 | Test ID: | | 62232 | | | landomi | | | | | | | | | Modified EPAMH + 5% American River |
| | Day | p | Н | D. | О. | Conductivi | ty (μS/cm) | Temp | | | | Sur | vival / R | eproduct | ion | | | | SIGN-OFF |
| | | New | Old | New | Old | New | Old | (°C) | Α | В | С | D | Ē | F | G | Н | 1 | J | |
| | 0 | 7.95 | | 8.4 | | 322 | | 25.2 | ව | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 1/11/15 New WO: Test Init YJ Sol'n Prep CO HPT Time 17-45 |
| | 1 | 8.30 | 01.8 | 8.4 | 87 | 347 | 376 | 25.3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 1/5/5New WQ: La Counts To Sol'n Prep. 5M Old WQ: Time 460 |
| | 2 | 8.36 | 8.14 | 8.4 | 8.i | 329 | | 25.0 | ؽ | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Ø | 0 | Date A/16/15 New WQ: SVV Counts ARCE Sol'n Prep: CP Old WQ: SP Time 1345 |
| Įo. | 3 | 7.92 | 8.85 | 25.15 | 8.3 | 319 | 511 | 29.1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | Date: 1,17,15New WQ: CL Counts The Sol'n Prep: Th Old WQ: CL Time 1430 |
| r Conti | 4 | J. 8.08 | | 8,5 | 8.2 | 323 | 395 | 24.8 | (0 | 6 | 6 | 7 | 8 | 0 | 0 | 3 | 7 | 7 | Date: 1818 lew WQ: 15 Counts CD Sol'n Prep: Old WQ: AW Time 1235 |
| Lab Water Control | 5 | 790 | | | 8.3 | 316 | 363 | 25.0 | 12 | 12 | 14 | 12 | 15 | 14 | 11 | 11 | 10 | 11 | Date: 4/19/19 New WQ: CL Counts (3) Sol'n Prep: SM Old WQ: FUS Time: 1600 |
| La | 6 | 7.58 | 8.24 | 8,8 | | 349 | 391 | 24.8 | 0 | 0 | 14 | 0 | 19 | 15 | 16 | 21 | 0 | O | Date: HIZOLNEW WOMR Counts CTD Sol'n Prep (3) Old WOMA Time (625) |
| | 7 | / | 700 | | 6.9 | | 350 | 25.1 | 21 | 18 | 0 | 15 | 0 | 0 | 0 | 0 | 13 | 12 | Date: Year-1 New WQ: Counts Sol'in Prep: Old WQ: Time(Sol |
| | 8 | | DHP | | RIXT | | SETT. | 1 | | 10 | | | | | | | | | Date: Old WQ: Counts Time: |
| | | | | | 4-14-14 | | | Total= | 39 | 36 | 34 | 34 | 42 | 35 | 33 | 35 | 30 | 30 | Mean Neonates/Female = 34-8 |
| | Day | р | H | D | .0. | Conductiv | ity (μS/cm) | | | | | Surviva | | duction | | | | | RT BATCH NUMBER |
| | | New | Old | New | Old | New | Old | | Α | В | С | D | Е | F | G | Н | =1 | J | |
| | 0 | 785 | | 8.4 | | 1245 | | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 175 |
| | 1 | 8.07 | 8.05 | 8.4 | 9.6 | 1327 | 1412 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 175 |
| | 2 | 8,24 | 8.04 | 8.7 | 8.1 | 1294 | 1532 | | Ð | 0 | 0 | 0 | 0 | O | 0 | 0 | ે | 0 | 175 |
| | 3 | 7.97 | 8.54 | 355 | 8.0 | 1297 | 1551 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 175 |
| 500 mg/L | 4 | 8.01 | 8.13 | 8.5 | 8.1 | 1348 | 1469 | | 5 | 6 | 7 | 15 | 6 | 5 | 6 | 6 | 4 | 7 | 175 |
| 500 1 | 5 | 7.88 | 7.84 | 8.3 | 8.1 | 1242 | 1381 | | 10 | 14 | 12 | 8 | 14 | 10 | 13 | 14 | [] | 11 | 175 |
| | 6 | 7.64 | 8.16 | | 82 | 1252 | 1379 | | 13 | 0 | 20 | 13 | 18 | 0 | 16 | 19 | 3 | 0 | 176 |
| | 7 | - | 8.03 | | 69 | / | 1389 | | 0 | 17 | 0 | 0 | 0 | 20 | 0 | 0 | 15 | 18 | |
| | 8 | | 0 - | | | | | | | , , | , | | | | PB 4.2 | 1.15 | | | |
| | | | | | | | 4 | Total= | 28 | 37 | 39 | 26 | 38 | 35 | 45 | 39 | 33 | 36 | Mean Neonates/Female = 34/6 |
| | P | | | | | *************************************** | | | | | | | | | 35 | | | | |

| C | lient: | | | Refer | ence Tox | icant | | | N | laterial: | | Sodiu | ım Chlo | oride | | | Te | st Date: | 4/14/15 |
|-----------|--------|-------|------|-------|----------|-----------|-------------|---------|----|-----------|---------|-------|------------|--------------|----|----|---------|----------|------------------------------------|
| | ect#: | | 036 | | Test ID: | | 62232 | | F | Randomi | zation: | AII | 10. | 2.1 | | | Control | Water: | Modified EPAMH + 5% American River |
| | Day | р | Н | D. | Ο. | Conductiv | ity (μS/cm) | 101116 | | | | Sur | vival / Re | | | | | | |
| | | New | Old | New | Old | New | Old | (°C) | Α | В | С | D | Е | F | G | Н | 1 | J | |
| | 0 | 7.84 | | 815 | | 2200 | | | 0 | Ð | O | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | | 801 | | | 2138 | 2419 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ļ | 2 | 8.19 | 20.8 | 9.0 | 8.1 | 3323 | 2707 | | 0 | 0 | O | 0 | 0 | 0 | 0 | 0 | 0 | p | |
| | 3 | 8.04 | 8.42 | 9.0 | | | 2879 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1000 mg/L | 4 | 7.96 | 8,08 | 8.7 | | 2175 | | | 4 | 7 | 7 | 0 | 4 | 6 | 4 | 5 | 0 | 7 | |
| 1000 | 5 | 7.06 | 7.87 | 8.4 | 8-3 | 2175 | 2306 | | 7 | 11 | 10 | 10 | 8 | 11 | 13 | 14 | 7 | 12 | |
| | 6 | 7.70 | 8.12 | 9.0 | 8.2 | 2250 | 3 | | 0 | 15 | 18 | 12 | 14 | 17 | 19 | 10 | 0 | 0 | |
| | 7 | | 7.96 | / | 6.7 | / | 2477 | | 16 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 13 | 17 | |
| | 8 | | | | | | | | | | | | | | | | | | |
| | | | | | | | | Total= | 27 | 33 | 35 | 28 | 20 | 34 | 36 | 29 | 20 | 3(0 | Mean Neonates/Female = 30 M |
| | Day | | Н | | .0. | | ity (µS/cm) | SERRESE | | I p | | | l / Reprod | duction F | G | Н | 1 | 1 | |
| | 0 | New S | Old | B.G | Old | New | Old | | A_ | В | c O | D | 0 | | 0 | Ð | 0 | 0 | |
| | 0 | 7.85 | 1 | | 25 | 3110 | | | 0 | _ | | | | 0 | | | - | | |
| | 1 | | 800 | | I | | 3414 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 2 | 8.14 | 8.04 | 9.3 | 8.1 | 3110 | 3360 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 3 | - | 8.38 | | 8.2 | 3150 | 33.57 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| 1500 mg/L | 4 | 7.91 | 8.05 | | <u> </u> | | 3489 | | Ц | 4 | 74 | 14 | 5 | 4 | 5 | 3 | 3 | 5 | |
| 150 | 5 | 7.83 | 7776 | 8.7 | | | 3320 | | 2 | | _ | - | 10 | 1) | 4 | | 6 | 8 | |
| | 6 | 7-75 | 8.09 | 9.1 | 8.3 | 3129 | 338 | | 0 | 9 | | - | 12 | 0 | 9 | 10 | 0 | 0 | |
| | 7 | | 793 | / | 67 | | 3280 | | 0 | 0 | | _ | 0 | 15 | 0 | 0 | 10 | 114 | |
| | 8 | | | | | | | | | | | - | | | | | | | 12- |
| | | | | | | | | Total= | 6 | 27 | 12/4 | 1/4 | 27 | 30 | 18 | 24 | 19 | 127 | Mean Neonates/Female = 133 |

| (| Client: | | Reference Toxicant | | | | | | | Material: Sodium Chloride | | | | | | Test Date: | | | 4/14/15 |
|-----------|---------|----------------|--------------------|------|------|----------------|-------------------------|--------|-----|---|-----------------|-----|-----|----------------|-----|------------------------------------|-------------|----|----------------------------|
| | ject #: | 24036 Test ID: | | | | Randomization: | | | | A11/10.21 | | | | Control Water: | | Modified EPAMH + 5% American River | | | |
| | Day | | рН | | D.O. | | Conductivity (µS/cm) Te | | | Survival / Reproduction | | | | | | | | | |
| | | New | Old | New | Old | New | Old | (°C) | Α | В | С | D | Ē | F | G | Н | 1 | J | |
| 2000 mg/L | 0 | 7.84 | | 9.1 | | 4020 | | | 0 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 8 | ೦ | |
| | 1 | 7.93 | 7.18 | 9.1 | 9.4 | 4050 | 4800 | | 0 | 0 | 0 | 0 | 0 | 40 | 10 | 70 | 0 | 0 | |
| | 2 | 8.12 | 800 | 9.6 | 83 | 4015 | 4640 | | 0 | 0 | 0 | 0 | 0 | _ | | _ | 0 | 0 | |
| | 3 | 11.8 | 8:33 | 9.2 | 8.3 | 4020 | 4680 | | 0 | 0 | 0 | 0 | 0 | _ | | _ | 0 | 0 | |
| | 4 | 7,91 | 7.99 | 9,0 | 8.3 | 3943 | 4744 | | 0 | 1 | 4 | ١ | 2 | _ | | - | 3 | 2 | |
| | 5 | 7.79 | 7.78 | 9.0 | 8.2 | 4020 | 4270 | | a | 3 | 5 | 4 | 0 | _ | | _ | 6 | 4 | |
| | 6 | 7.79 | 8.07 | 9,3 | 8.1 | 4027 | 43730 | | 0 | 0 | 8 | 6 | | _ | | _ | Ö | 0 | |
| | 7 | | 789 | / | 31 | / | 1380 | | 6 | X/0 | 0 | 0 | 3 | _ | | | 3 | 3 | |
| | 8 | | | | | | | | | ~ | | | | _ | | | | | |
| | | | | | | | | Total= | 8 | X/4 | 17 | 11 | 6 | 110 | 7/0 | 1/0 | 12 | 9 | Mean Neonates/Female = 6.7 |
| | Day | | pН | | D.O. | | Conductivity (µS/cm) | | a . | Survival / Reproduction A B C D E F G H 1 J | | | | | | | | | |
| | - | New | Old | New | Old | New | Old | | A | В | С | | | | | | | - | |
| 2500 mg/L | 0 | 7.84 | | 9,3 | | 4940 | | | 0 | 0 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 0 | |
| | 1 | 792 | | 9.3 | | | 2690 | | 0 | 0 | 0 | 0 | 0 | O | 0 | <u>C</u> | 7/0 | Ŷ- | |
| | 2 | 8.10 | 7.99 | 10.0 | 8.7 | 4854 | 2520 | | 40 | 76 | */ ₀ | 50 | 50 | 0 | 3 | 0 | | >0 | |
| | 3 | / | -/- | / | / | / | _ | | | | _ | / | | _ | / | _ | _ | _ | |
| | 4 | / | / | | _ | | - | | | | / | | / | - | _ | | _ | _ | |
| | 5 | / | | / | | | | | | / | / | / | / | / | _ | | - | - | |
| | 6 | / | | | | | | | | / | / | / | / | | _ | _ | - | - | |
| | 7 | | | - | | | | | _ | _ | / | / | / | _ | | / | _ | _ | |
| | 8 | | | | | | | | / | / | / | / | / | _ | | | _ | _ | |
| | | | | | | | | Total= | 140 | 1/0 | HO | 4/0 | 1/0 | 1/0 | 1/0 | 1/0 | 10 | #0 | Mean Neonates/Female = |